

The image features a dark blue rectangular box on the left side containing the RVCC logo. The logo consists of the letters 'RVCC' in a large, white, sans-serif font, with 'Rural Voices for Conservation COALITION' in a smaller, white, sans-serif font below it. The background of the entire image is a photograph of a forest with tall pine trees and a grassy clearing. A group of people is gathered in the clearing, looking towards the trees. The text 'FOREST SERVICE PROJECT PLANNING TO IMPLEMENTATION' is written in a large, white, sans-serif font across the middle of the image. The date 'JUNE 2022' is written in a smaller, white, sans-serif font below the title. There are also several decorative, overlapping circular lines in shades of green and blue that curve across the top and right sides of the image.

RVCC
Rural Voices for
Conservation
COALITION

JUNE 2022

FOREST SERVICE PROJECT PLANNING TO IMPLEMENTATION

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ACKNOWLEDGEMENTS

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ABOUT RVCC



RVCC envisions healthy landscapes and vibrant rural communities throughout the American West. We are committed to finding and promoting solutions through collaborative, place-based work that recognizes the inextricable link between the long-term health of the land and the well-being of rural communities. By bringing rural leaders together to share their work, we serve as a vital peer learning and capacity building network that

accelerates the practice of land stewardship and aligned economic development. To learn more about our work, visit: www.ruralvoicescoalition.org

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The purpose of this guidebook is to provide collaborative organizations or groups with information about the Forest Service's project planning and implementation processes. The information provided in this document does not, and is not intended to, constitute legal advice and no attorney/client relationship is created or implied by the information contained herein. All information, content, and materials available in this guidebook are for general informational purposes only.

FUNDING ACKNOWLEDGEMENT

Funding for this project was provided to Wallowa Resources and the Rural Voices for Conservation Coalition by the USDA Forest Service Pacific Northwest Region through a cooperative agreement (Award #18-DG-11062765-746). The USDA Forest Service is an equal opportunity employer.

LAYOUT & DESIGN

Autumn Ellison Design, LLC

PHOTOS

Courtesy of Autumn Ellison (Front cover; pages 7, 8, 14, 23, and 33; back cover) and public domain courtesy of USDA Forest Service (pages 1, 3, 4, 6, 9, 13, 18, 19, 21, 22, 24, 25, 26, 28, 31, 34, 35, 36, 37, 49, and 51)

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INTRODUCTION

For many forest collaborative groups, engagement in the planning of Forest Service projects has become familiar territory. These groups, along with Forest Service staff, have developed robust processes for engaging with the agency from the very beginning of project development and through the National Environmental Policy Act (NEPA) process. Collaboratives have become a cornerstone of many forest planning efforts by finding areas of agreement and shared understanding among diverse interests, and also by bringing outside knowledge and perspectives to the development of management actions.



In recent years, collaboratives' planning-focused scope has begun to widen. As more and more collaboratively planned projects move into post-NEPA implementation, collaborative groups are increasingly exploring what it looks like to engage in this phase of the agency's work. The involvement of collaboratives and other external partners in project implementation has been encouraged through recent efforts such as the Forest Service's Shared Stewardship initiative and the Collaborative Forest Landscape Restoration Program. Further, this engagement has potential to increase capacity as some partners bring additional resources to implementation and as groups help unify efforts across agencies and jurisdictions.

To more effectively engage in implementation, a number of collaboratives have voiced a desire to better understand how the Forest Service moves forward with a project after a NEPA decision is finalized. This includes the processes of deciding when and how to accomplish planned activities and the development of timber sales, contracts, and agreements to carry out the work. In response to the need for more information on this realm of forest management -- and how it relates to project planning -- the Rural Voices for Conservation Coalition (RVCC) developed the following guidebook that charts the course of a Forest Service project, from planning through implementation. This document aims to help collaborative groups and other external partners better understand the full "lifecycle" of a Forest Service project and, in turn, develop a better sense for how and when to productively engage with various aspects of the agency's work, including implementation. While this document does not provide specific suggestions for how collaboratives can engage in Forest Service processes, a number of other documents do address this topic and are referenced in the Appendix.

“ This document aims to help collaborative groups and other external partners better understand the full “lifecycle” of a Forest Service project and, in turn, develop a better sense for how and when to productively engage with various aspects of the agency’s work, including implementation. ”

About This Guidebook

Important terms throughout this document are bolded and included in a glossary in the Appendix.

While the Forest Service undertakes a variety of management activities -- from timber harvest to trails improvements to bridge replacements -- this guidebook largely focuses on planning and implementation processes as they relate to **vegetation management** activities. These activities are often a key focus of collaborative groups and include commercial timber harvest; non-commercial thinning of smaller diameter trees; and fuels reduction tasks such as hand thinning trees or branches and scattering, chipping, or piling slash such as treetops and branches. Given the complexities of prescribed burning, we did not delve into the specific details of implementing that activity in this document. Other RVCC resources that address prescribed fire include our 2021 report "[Fighting Fire with Fire: Policy Options to Increase the Use of Prescribed Fire on National Forests](#)," and our 2022 paper titled "[Pathways to Prescribed Fire: Streamlining cooperative burn partnerships between nonprofit partners and the Forest Service](#)."

In developing this guidebook, RVCC made every attempt to accurately portray the Forest Service's pre-NEPA, NEPA, and post-NEPA implementation processes. However, the specific activities involved in carrying out individual projects can vary greatly based on the nature of the project and local circumstances. In addition, law, regulation, policy, and case law that guides these processes is complex and continually evolving, leading to further variability and periodic modifications in how practices are carried out on the ground. In terms of the sequencing of these steps and processes, some steps (such as those associated with the NEPA process) follow a particular order determined by federal regulations, while other processes (such as those related to post-NEPA implementation planning and preparation) may happen concurrently and their sequencing may vary depending on the project,

district, or forest. Similarly, while this document attempts to specify which agency positions are responsible for various aspects of planning and implementation, this is also variable by local Forest Service unit. No single employee oversees a project through its entire lifecycle.

For these reasons, this document should be used as a general guide that reflects our best understanding of agency processes as of early 2022. We recommend that external partners consult with local Forest Service staff when you have questions about these activities in relation to a specific project. Lastly, this guidebook is intended to be a reference and was designed so that sections can stand alone and do not need to be read in order, nor in their entirety. We welcome readers to review the table of contents and then to skip to the sections that are of most interest and relevance to their work.

Methods

This document was developed through interviews and document review that focused on planning and implementation processes in Forest Service Region 6, which provided the funding for this project. We conducted 12 interviews with Forest Service silviculture, timber, fuels, and planning staff at the regional, forest, and district level in both Oregon and Washington. We began our document review by reading through relevant chapters in the Forest Service Manual and Handbook. These two series of documents, referred to as **agency directives**, are the primary source of administrative direction for agency employees. They compile agency policies, practices, and procedures, which are guided by federal statute and administrative regulations. Additionally, we reviewed Forest Service training and guidance documents, grey literature, and documents developed by collaborative groups and collaborative support organizations to facilitate partner engagement in agency planning and implementation. Review was provided by 10 Forest Service staff, RVCC staff, and one additional non-profit partner.



I. PLANNING

Over the course of planning a Forest Service **project**, the agency transitions from less formalized and largely internal planning activities to the highly structured, public-facing proposal development and environmental analysis processes dictated by the National Environmental Policy Act (NEPA) and other associated federal regulations. As part of the NEPA process, federal agencies must assess the environmental impacts of their proposed actions and must consider other applicable laws and regulations.¹ Laws that apply on National Forest System lands in conjunction with NEPA include the National Forest Management Act, the Endangered Species Act, the National Historic Preservation Act, and the Clean Water Act.² Further, an agency's proposed actions and/or their location may trigger the need to consider additional laws and regulations such as the Wilderness Act, the Wild and Scenic Rivers Act, and the 2001 Roadless Area Conservation Rule (Roadless Rules).³ The intersection between NEPA and these other laws and regulations may require additional analysis and process requirements and increase project complexity. The section below attempts to provide a basic outline of the Forest Service's project planning and NEPA process, but in no way does it comprehensively address the complicated interaction between NEPA and other laws, regulations, policies, case law, and other factors.

Pre-NEPA



The following subsections describe the types of planning, assessment, and consultation activities that the agency may undertake as it evaluates new management actions and develops ideas for more specific projects that will then proceed through the NEPA process. Projects, in this context, are activities that are grouped together for inclusion in a single **proposed action** that is evaluated via the NEPA process. Pre-NEPA planning does not take place over a particular timeline, nor does the agency follow a certain set of procedures. It will also look different depending on the project and the forest unit, making it important for collaborative groups and other partners to engage with local agency staff to understand how they go about this phase of land management planning.

Tribal Consultation

At the very inception of any management planning effort, the agency is expected to engage with tribes that have treaty rights or trust assets on that forest or grassland.⁴ This engagement takes the form of government-to-government consultation as well as coordination and collaboration.⁵ Consultation in particular is required by the United States government's trust responsibilities and treaty obligations to tribes. Agency directives specify that the Forest Service must consult with federally recognized Indian or Alaska Native tribes and Alaska Native corporations whose rights or interests may be affected by a proposed action or decision.⁶ Additionally, the Forest Service encourages engagement with non-federally recognized tribes, including Native Hawaiians and those tribes that are state recognized.⁷ According to agency directives, government-to-government consultation with tribes should involve "timely, meaningful, and substantive dialogue," between delegated agency line officers and tribal leaders, or their designated representative(s).⁸ Forest Service district staff and tribal government department staff may also engage in staff-to-staff information exchange and collaboration, which can support and lead to better government-to-government consulta-

tion.⁹ The 2021 *Joint Secretarial Order on Fulfilling the Trust Responsibility to Indian Tribes in the Stewardship of Federal Lands and Waters* makes clear that consultation must happen at the earliest stages of planning and decision-making and should include agencies "giving due consideration to Tribal recommendations on public lands management."¹⁰ The Secretarial Order also sets out expectations that the agency will incorporate tribal land management plans into its landscape or watershed-scale planning efforts and that the agency will consider tribal expertise and Indigenous knowledge during decision-making more generally, especially concerning management of resources subject to reserved tribal treaty rights and subsistence uses.¹¹

While guided by law and policy, the consultation process is interactive and often looks different with each tribe. Despite this variation, all tribal consultation -- both before and during the NEPA process -- must comply with certain confidentiality standards and happens separate from and on a parallel track with collaborative and public comment opportunities.¹² Some tribes, for example, have regularly scheduled consultation meetings with Forest Service staff during which they discuss a number of projects in different stages of planning and implementation. Other

tribes participate in planning as cooperating agencies or on interdisciplinary teams outside of government-to-government consultation.¹³ In its decision-making, the Forest Service is required to balance its trust responsibilities to protect tribal treaty rights and resources with other agency mandates, such as those related to multiple use.¹⁴

Pre-NEPA Project Development

The planning of future management activities and development of specific projects begins well before the more formal, defined steps of the NEPA process. This is a largely internal phase of the agency's planning work and the procedures involved vary substantially across districts and forests and also based on project type and complexity, previous analysis, available data, and other factors.¹⁵ Additionally, project development is often iterative and non-linear and there is not a defined point at which the agency officially starts planning for a particular project at this stage.¹⁶ With that in mind, the following description is intended to provide a broad outline for what this stage commonly includes.

Generally, a project idea emerges from the agency's assessment of where and what work (e.g., tree thinning, invasive species treatment, stream restoration) is needed based on existing conditions and the desired conditions and objectives outlined in applicable local or regional management plans.¹⁷ Those plans include each forest's Land and Resource Management Plan (or, "Forest Plan") as well as plans like the Northwest Forest Plan or a Wild and Scenic River Management Plan.¹⁸ This phase may be informed by early tribal engagement and consultation and is also the time at which the agency may begin to explore Tribal Forest Protection Act proposals with tribes. Evaluating landscape conditions and potential management actions may require additional data collection such as botany or wildlife surveys, as well as consideration of traditional ecological knowledge. Specialists are often also able to reference existing data such as remote sensing data, or information from pre-

vious tree **stand** surveys or watershed condition assessments.¹⁹ Based on the universe of possible work, the agency identifies management activities within a certain area that are related and/or make sense to implement together and groups those activities into a defined project that could be put forward for consideration and analysis through the NEPA process. Along the way, the Forest Service may prepare documents, maps, and data reports to support its assessment and development of potential management activities and locations.²⁰ The agency also may take into account suggested management actions put forward by collaborative groups or other external partners during this somewhat amorphous project development phase.²¹ Engagement of stakeholders in the pre-NEPA phase of project development can help streamline the formal public input and comment processes (see below) that are part of NEPA.²² However, there is no requirement that the agency inform the public or solicit public input as it goes about this phase of its planning work.²³ Though variable in how it progresses and manifests, the agency's project development process works toward the same outcome regardless of project or forest unit. This end goal is the creation of a proposed action (described below) – essentially a formal project proposal that is one of the necessary first steps in the NEPA process.²⁴

It is common (though not universal) for forests to outline general timelines and sequencing of potential projects in what is called a **program of work**.²⁵ While the program of work can be an important longer-term planning tool, Forest Service staff emphasized that priorities and focus areas often get re-evaluated and revised due to disturbance events such as wildfire, shifts in funding, changes in management priorities at the regional level, and other factors.²⁶ Given these frequent shifts, the program of work is generally considered an internal working document of projects and activities the agency plans to move forward through the NEPA process, though members of the public may inquire into the plan and it may come up during a collaborative group's discussions.²⁷

The projects included in the program of work are prioritized and pursued based on a number of factors including:

- Agency targets, including those related to timber volume and acres where fuel conditions were reduced or maintained (also known as the “hazardous fuels” target). These targets are often the key drivers for forests’ NEPA programs of work.²⁸
- The degree of departure from desired conditions described in the forest plan, with priority generally given to areas with higher degrees of departure.²⁹
- Agency funding priorities or programs such as the Collaborative Forest Landscape Restoration Program that may steer the focus of future management activities to a particular area.³⁰
- When available, agency-driven forest or watershed-specific analyses and processes that further prioritize management actions and/or locations.ⁱ
- Information and feedback from the general public, forest visitors, landowners, user groups, permittees and forest collaborative groups.³¹
- Participatory and collaborative planning processes that include or encompass additional partners and land ownerships, such as those aligned with State Forest Action plans, habitat restoration goals, or priority areas outlined by nonprofit organizations.³²
- Anticipated budget and organizational capacity.³³



ⁱ For example, the Okanogan-Wenatchee National Forest in 2012 developed a National Forest Restoration Strategy that specifies the forest’s restoration needs and objectives and sets the context and priorities for restoration treatments. The Malheur National Forest developed priority watersheds to help guide increased investments associated with the Forest Service’s “Eastside Restoration Strategy.”

NEPA Proposal Development



The formal NEPA process for a specific project begins with proposal development. During this phase, the Forest Service verifies that its proposed project meets standard criteria in terms of NEPA applicability and consistency with existing laws and plans, develops a guiding purpose and need for the project, and creates an initial proposed action that is put forward for environmental analysis.

Proposal Evaluation

Before moving forward with a project proposal, the agency must ensure that all of the included management actions comply with existing law and policy. This involves a review of the proposal to confirm it is consistent with the forest plan,ⁱ other regional plans such as the Northwest Forest Plan, previous NEPA decisions, and all other applicable laws and regulations.³⁴ The agency also must make a determination that NEPA applies to the proposed activities, which is guided by criteria established in federal regulations.³⁵ NEPA analysis is almost always required for proposed vegetation management projects.³⁶

Project Initiation

Once the agency determines it will move forward with a NEPA analysis for a proposed project, a designated **responsible official** (typically a district ranger or forest supervisor who oversees the analysis process) assembles a team of specialists from various resource areas which is called the **interdisciplinary team or "ID team."**³⁷ These specialists (e.g., wildlife biologists, soil scientists, silviculturists, engineers) help develop the

proposed action (explained below), respond to public comments, develop alternatives to the proposed action and analyze potential effects of the proposed action, and any alternatives.³⁸ Other tasks usually included in project initiation include an initial identification of the level of NEPA analysis that the agency anticipates a project requiring, and, potentially, developing a public involvement plan.³⁹ It is also common for the responsible official to write a **project initiation letter**, which is the agency's way of internally signaling that it will move forward with – and commit time and resources to – a NEPA process.⁴⁰ The letter may include the project objective, schedule of work for the analysis, the official's overall direction and expectations for the ID team, potential issues associated with the project, and other logistical details.⁴¹ It can also include expectations of collaboration throughout the NEPA process.⁴²

Purpose and Need Statement

The agency establishes its intentions for the project through the development of a **purpose and need statement**, which explains the rationale behind moving forward with the proposed

ⁱ A forest's Land and Resource Management Plan is a key determinant of the Forest Service's decision-space related to the development and evaluation of any project-level management action. These plans are intended to guide sustainable, integrated resource management and are mandated by the 1976 National Forest Management Act (NFMA). The 2012 Planning Rule associated with NFMA sets out the latest requirements for new or revised forest plans and forest plan amendments. If proposed actions or alternatives associated with a proposal are not consistent with the forest plan, then the plan itself must be amended in order for the proposed action or other alternative to be selected and implemented.

management actions.⁴³ The statement is framed in terms of the changes needed within the project area, which are based on the current and desired ecological conditions on the landscape.⁴⁴ This statement is important in setting the overall direction for the NEPA process given that the proposed action and any alternatives analyzed should meet the stated purpose and need.⁴⁵ The final **decision document** based on any NEPA analysis also must consider and explain how well the **selected alternative** meets the purpose and need.⁴⁶

Proposed Action

The proposed action builds from both the pre-NEPA project development process and the purpose and need statement.⁴⁷ This document

represents the agency's formalized proposal for activities it would authorize, recommend, or implement to address the identified purpose and need.⁴⁸ The proposed action includes a detailed description of the management action to be taken as well as anticipated implementation locations and timelines.⁴⁹ It can also include the monitoring required to ensure desired outcomes are accomplished.⁵⁰ The proposed action should be viewed as the agency's initial outline of potential management activities that may be modified during the NEPA process through revisions to the initial proposed action and development of alternatives to the proposed action.⁵¹ The agency's release of the proposed action to the public for **scoping** (explained below) marks the beginning of the formal, public-facing portion of the NEPA process.⁵²



NEPA Environmental Analysis



Once the Forest Service develops a proposed action, it proceeds through steps that are part of the environmental analysis phase of the NEPA process. There are three categories of environmental analysis and while they are each associated with different requirements, they follow a similar basic process: the agency collects public input on its proposed action and then, based on that feedback as well as other data sources and analyses, evaluates the anticipated environmental effects of the proposed action and any alternative actions, if applicable.⁵³ The responsible official then makes a decision on how the agency will move forward based on that analysis process.

Public Input

The agency begins the environmental analysis stage of the NEPA process by soliciting input on its proposed action from the public, other agencies, and its own staff. This period is termed scoping, and is the time during which the agency explores the scope of potential issues and effects that may be associated with the proposed action, as well as possible alternative actions that the agency should consider in its subsequent analysis.⁵⁴ Forest Service regulations require the agency to conduct scoping on all projects regardless of whether they are anticipated to be a **Categorical Exclusion (CE)** or go through an **Environmental Assessment (EA)** or an **Environmental Impact Statement (EIS)** analysis (described below).⁵⁵ The agency uses different scoping practices depending on the project and analysis type—it is up to the responsible officials to determine when, how, and for how long scoping will occur.⁵⁶ Public scoping practices can range from public meetings and field trips to a few emails sent to interested parties.⁵⁷ During this same time period, the agency also conducts scoping internally to further explore and solicit input on the proposed action.⁵⁸ The input the agency gathers during scoping can help refine its determination of what level of analysis is needed and may lead to modification of the proposed

action and/or development of alternatives if issues or unresolved concerns are identified.⁵⁹

Most proposed actions that are soon to begin scoping or are undergoing environmental analysis and documentation are announced and tracked on each forest's schedule of proposed actions (SOPA) webpage.⁶⁰ Forests regularly update these SOPA webpages and, for each entry, share information on project status, a link to proj-

“The agency uses different scoping practices depending on the project and analysis type—it is up to the responsible officials to determine when, how, and for how long scoping will occur. Public scoping practices can range from public meetings and field trips to a few emails sent to interested parties.”

ect documents, and information for the project contact person.⁶¹ When undertaking an EIS, the agency also must announce its intent to conduct that analysis through a notice in the Federal Register.⁶² Additionally, Forest Service units may announce NEPA-related public comment opportunities, such as community meetings, in local newspapers or other media.⁶³

CATEGORIES OF NEPA ANALYSIS

There are three different categories of NEPA analysis. The Forest Service initially selects the type of analysis it will pursue for a project based on anticipated environmental impacts, characteristics of the project, overall project complexity, available regulatory authorities, case law, and other factors.⁶⁴ The three categories of analysis are as follows:

- A **Categorical Exclusion (CE)** is generally the least detailed and complex level of analysis and includes fewer requirements related to public involvement in decision-making.⁶⁵ As the name suggests, a categorical exclusion means a proposed action is excluded from an analysis in an environmental assessment or environmental impact statement.⁶⁶ A proposed action may be categorically excluded if 1) the anticipated effects will not be **significant**;^{i,67} 2) there are no “extraordinary circumstances”ⁱⁱ related to the proposed action; and 3) the proposed action falls into one of several specific categories already determined through statute or rulemaking to be excluded from more extensive individual analysis.ⁱⁱⁱ The purpose of a CE analysis is to ensure that project effects are not significant and that extraordinary circumstances do not exist that would require the preparation of an EA or EIS.
- An **Environmental Assessment (EA)** is conducted for proposed actions that are not appropriate for categorical exclusion and either do not have significant environmental effects or the significance of the environmental effects is uncertain.⁶⁸ An EA analysis can be less extensive than the analysis required to produce an EIS and is used to determine whether a **Finding of No Significant Impact** (explained below) for the proposed actions can be supported.⁶⁹
- An **Environmental Impact Statement (EIS)** is generally the most rigorous and complex level of analysis and is required if the effects of a proposed action may or will be significant.⁷⁰ The purpose of an EIS analysis is to disclose potential significant effects of the proposed action and develop and analyze alternatives to the proposed action.⁷¹

ⁱ The Council on Environmental Quality (CEQ), which promulgates NEPA implementation regulations, requires considerations of both context and intensity when determining the significance of an action. Those considerations are listed at 40 CFR 1508.27.

ⁱⁱ According to 36 CFR § 220.6, the agency must consider the existence of certain resource conditions in determining whether extraordinary circumstances exist in relation to a proposed action. Those resource conditions include federally listed threatened or endangered species or designated critical habitat, congressionally designated areas such as wilderness, and American Indian and Alaska Native religious or cultural sites. According to the regulation “the mere presence of one or more of these resource conditions does not preclude use of a categorical exclusion (CE). It is the existence of a cause-effect relationship between a proposed action and the potential effect on these resource conditions, and if such a relationship exists, the degree of the potential effect of a proposed action on these resource conditions that determines whether extraordinary circumstances exist.”

ⁱⁱⁱ 36 CFR 220.6 references the categories of activities that may be categorically excluded from an EA or EIS process.

Development of Alternatives (EA and EIS only)

During development of an EA or EIS, the Forest Service ID team uses information received from scoping to, if necessary, modify the proposed action or develop alternative actions that meet the purpose and need and address unresolved issues and conflicts.⁷² **Mitigation measures**, monitoring, and **adaptive management** strategies may be added to address concerns about potential management impacts.⁷³ While external entities like collaborative groups can propose alternatives during scoping, the Forest Service makes the final decision on whether to analyze a particular alternative in detail.⁷⁴ There is no direction or policy requirement that the agency produce a specific number of alternatives, though federal regulations reference the need to examine “reasonable alternatives” to address unresolved conflicts related to the proposed action.⁷⁵ Also, when conducting an EIS, the Forest Service is required to examine a no-action alternative (i.e., what would happen if the proposed action were not implemented).⁷⁶ For each alternative, ID team specialists determine the actions required to meet the stated objectives, including vegetation treatments, harvesting procedures, potential **logging systems**, and roads systems.⁷⁷ Specialists often consult with one another in developing alternatives to ensure, for example, that a **silvicultural prescription** accurately considers specific wildlife habitat needs or is feasible with certain logging systems.⁷⁸

Effects Analysis

Once it has developed alternatives, the ID team analyzes the anticipated physical, biological, social, and economic impacts of the proposed action and any alternatives to the proposed action.⁷⁹ Both this stage and the development of alternatives may involve additional data collection (e.g., surveys or field reconnaissance).⁸⁰ Findings from the analysis process are documented and submitted to the responsible official.⁸¹

Public Comment (EA and EIS only)

Once the Forest Service ID team completes the effects analysis, the agency releases the EA or draft EIS for public comment.⁸² The agency may identify a **preferred alternative** or alternatives in these documents, which is the agency’s preferred course of action based on its analysis.⁸³ The public comment process is an opportunity for the public to consider a more detailed view of the agency’s proposed plans and corresponding analysis, and to thus provide more specific feedback than during the scoping process.⁸⁴ Timelines and requirements for this comment period vary based on the type of project and level of analysis.⁸⁵ After the comment period, the agency reviews, considers, and if needed, responds to the public input received by conducting additional analysis, adjusting the proposed action or alternatives, or other actions.⁸⁶

“The public comment process is an opportunity for the public to consider a more detailed view of the agency’s proposed plans and corresponding analysis, and to thus provide more specific feedback than during the scoping process.”

These actions lead to the finalization of an EA or EIS, which is necessary for the development of a draft decision document (explained below). The agency is required to include responses to public comments in the final EIS analysis document, and may do the same for the other analysis categories.⁸⁷

Decision-making

In this final stage, the responsible official decides how the agency will move forward on the proposed management actions (either the proposed action or an alternative) based on the findings of the environmental analysis and how well the selected actions meet the original purpose and need.⁸⁸ With the exception of some types of cat-

egorical exclusions, the responsible official issues what is called a decision document to publicly communicate their decision and reasoning for selecting a certain course of action, referred to as the selected alternative.⁸⁹ It is common for decision documents and the associated analysis documents to establish certain sideboards as part of the selected alternative through the inclusion of **project design criteria, best management practices**, and other resource protection measures intended to mitigate anticipated impacts of the approved actions.⁹⁰ Beyond those commonalities, the agency must follow different decision-making processes and produce different decision documents for each analysis category.

- CEs are documented with a **decision memo**. Decision memos are only required for certain categories of activities and there is no requirement to give the public a formal opportunity

to comment on a draft of the decision memo before it is finalized.⁹¹ In some cases a draft decision memo may be made available for public review and comment at the discretion of the responsible official.⁹²

- EAs are documented with a **decision notice** and Finding of No Significant Impact (DN/FONSI), which are issued if the EA analysis finds the selected alternative will not have a significant environmental impact.⁹³ Before finalization of those decision documents, the agency must go through a predecisional administrative objection process (explained in box below).⁹⁴
- EISs are documented with a **record of decision (ROD)**. Similar to EAs, EISs are subject to a predecisional administrative objection process before a final record of decision can be issued.⁹⁵

ADMINISTRATIVE OBJECTION PROCESS

Before finalizing a decision on an EA or EIS (or a proposed Forest Plan, Forest Plan revision, or Forest Plan amendment) the Forest Service is required to go through an administrative objection process.⁹⁶ This process gives the public an opportunity to review and, under certain circumstances, object to the agency's decision before it is finalized.⁹⁷ Timelines and requirements associated with administrative objection vary based on the type of project and level of analysis, but it generally involves the following steps.

1. The agency finalizes its EA or EIS document and issues a draft decision document (a draft DN/FONSI or draft ROD).⁹⁸
2. The release of the draft decision document initiates a required objection period. During the objection period, individuals and entities who submitted timely, specific written comments during the public comment process afforded by NEPA may file a written objection to the decision before it is finalized.⁹⁹
3. If an objection is filed, the agency must proceed through an objection resolution process that includes meeting with the objector(s) and preparing an objection response.¹⁰⁰
4. The agency may issue a final decision document after preparing a written objection response. If no objection is filed, the agency may move forward with finalizing the decision document.¹⁰¹



II. IMPLEMENTATION

With the signing of a decision document based on the National Environmental Policy Act (NEPA) process, a project moves into the implementation phase, which involves coordinating how activities are carried out, developing more detailed site-specific plans, and completing on-the-ground project preparation activities. In this context, a “project” refers to management activities (e.g., timber harvest, road improvement, stream restoration) in the same general area that are planned and/or implemented together.¹ As described below, these implementation steps are informed and constrained by the planning and analysis that occurs before and during the NEPA process. Both NEPA analysis documents and the decision documents themselves contain language that dictates how planned activities can be carried out.

*Additionally, while presented as separate, sequential steps, many of the processes in the implementation phase run parallel to and are influenced by one another. The boundaries and configuration of a fuels reduction project, for example, may influence the type of logging equipment used, which may influence overall project costs and revenues, which may influence the **contract** or **agreement** mechanism used to carry out the project. Conversely, the **implementation mechanism** (e.g., timber sale, stewardship contract, service contract) selected may influence how a project is designed, which carries implications for other aspects of implementation. Some of these implementation processes also differ depending on the type of work (commercial or non-commercial) or implementation mechanism used. When that is the case, this document will highlight that distinction.*

Implementation Planning



This phase involves developing plans and timelines for implementing activities that were evaluated and approved via the NEPA process. The agency considers a number of interrelated factors when deciding when and how to get work done on the ground.

After a NEPA decision is signed, staff representing timber, silviculture, fuels, hydrology, and other natural resources specialties meet with each other and with timber sale, contracting, and grants and agreement specialists to coordinate when and how to implement commercial and non-commercial activities approved in the decision.² These efforts ideally inform the creation of longer-term implementation plans that forests are expected to maintain.³ The plans are generally supposed to extend out approximately five years, though agency staff said activities and timelines are nearly always in flux.⁴ Forest Service staff explained that implementation planning is an ongoing process that involves constant reassessment and adjustment as activities are completed; timelines, priorities or conditions change; or new funding becomes available.⁵ The degree of coordination between natural resources staff, and the frequency and nature of implementation planning efforts also appears to vary by district and by forest, according to agency staff.

Coordinating the implementation of planned activities involves a number of interrelated evaluations and decisions. In general, those decisions relate to:

“Coordinating the implementation of planned activities involves a number of interrelated evaluations and decisions.”

- The implementation mechanism (e.g., timber sale, service contract, stewardship contract) used to carry out planned activities.⁶ A range of implementation mechanisms, each with distinct features, are available for carrying out planned work. Common implementation mechanisms are outlined on pages 18–19. Factors considered by the agency in choosing an implementation mechanism are discussed on pages 20–21.
- The bundling or grouping of activities and/or **operational units** into a project that will be carried out through a certain implementation mechanism.⁷ The agency bundles activities and operational units based on what is economically and logistically feasible and aligns with the desired conditions in the NEPA analysis and decision. Major factors influencing the design of projects are explored on page 22.
- The timing and prioritization of activities for implementation. While the agency generally prioritizes commercial projects, multiple factors and forces come into play during decision-making about which activities to pursue and when.⁸ Those factors are discussed further on page 23.

SPOTLIGHT: IMPLEMENTATION MECHANISMS

There are a number of implementation mechanisms that the agency may select to carry out planned vegetation management activities. Commercial work can be implemented through traditional timber sales, stewardship contracts, stewardship agreements, or Good Neighbor Authority (GNA) agreements. Service activities or **service work** (also known as non-commercial activities or non-commercial work) can be implemented either in conjunction with or separate from commercial projects.⁹ In a traditional timber sale, for example, certain service work within the sale area can be included in a **sale area improvement plan**, road maintenance plan, or **brush disposal plan**, which are funded through **timber receipts** from the sale or deposits from sale purchasers.¹⁰ These plans are discussed in further detail in the “Permanent and Trust Fund Collections and Other Deposits” section below.¹¹ Other implementation tools, namely stewardship contracts or agreements and GNA agreements, allow non-commercial work to be implemented under the same contract or agreement as commercial activities.¹² Non-commercial activities also can be implemented on their own through various types of service contracts or through agreements such as participating agreements or challenge cost-share agreements.¹³ Commonly used implementation mechanisms are described in further detail below.

Timber sales

Timber sales are the primary mechanism for offering timber from National Forest System lands. Timber is primarily sold through a bid process or at a fixed price, though any sale appraised at over \$10,000 must, at least initially, be advertised and offered through a competitive process.¹⁴ Timber sales may not be sold at lower than a minimum rate established by the agency’s national headquarters (also referred to as the Washington Office) or regional offices. The agency must award the sale to the highest bidder who meets all terms and requirements of the sale, which are established in a timber sale contract.¹⁵

Stewardship contracts

Stewardship contracts are considered integrated resource contracts, which can incorporate both revenue-generating timber sales and service work.¹⁶ This capability enables the value of harvested timber to offset some or all of the cost of associated non-commercial restoration.¹⁷ The stewardship authority, which allows the Forest Service to use this integrated resource contract type, requires that such contracts be evaluated and awarded based on **best value criteria**, instead of cost alone.¹⁸ Integrated Resource Timber Contracts (IRTCs) are used when the value of the forest products is greater than the cost of planned service work.¹⁹ Integrated Resource Service Contracts (IRSCs) are used when the value of the timber is less than that of planned service work, and thus require agency appropriations to supplement costs for that work.²⁰ Under IRTC, timber receipts that remain after the exchange of goods for services -- referred to as “**retained receipts**” -- can be used to fund restoration service work on other stewardship projects.²¹ Collaboration with local interests and key stakeholders is required in the development and implementation of stewardship contracts and they must be used for work that accomplishes restoration objectives.²²

Stewardship agreements

Like stewardship contracts, stewardship agreements are used to complete projects that incorporate both commercial and non-commercial work, and allow revenues from commercial work to cover the costs of service work in the same project. Stewardship agreement proposals must be evaluated using a best value approach determination (which allows for consideration of factors other than cost), must be used to accomplish restoration objectives, do not allow for the cooperator to profit from agreement activities, and require collaboration throughout the life of the project.²³

Service contracts

Service contracts are used when the Forest Service acquires goods or services from another entity.²⁴ A service contract does not allow for the selling of timber or any other forest product, and is therefore only used for non-commercial work.²⁵ Service contracts fall under federal acquisitions regulations, which allow the government to evaluate service contract proposals or bids based on the best value to the government - not simply price.²⁶ Commonly used service contracts include:

- **Open:** Contracts that are awarded through full and open competition.
- **Indefinite delivery, indefinite quantity (IDIQ):** Contracts that allow for the agency to establish a formal relationship with a contractor that sets out a minimum and maximum amount of work within a specified time period and at a specific per-unit cost.²⁷ The government then issues task orders to request specific amounts of work as needed up until the end of the contract or the maximum ceiling of work.²⁸ With multiple IDIQ contracts, the agency establishes relationships with several contractors through a single **solicitation**.²⁹
- **Blanket Purchase Agreements (BPA):** Agreements that allow the agency to establish a relationship with a contractor or contractors to procure services on a repetitive basis.³⁰ BPAs cover specific types of work and, when those services are needed, the agency issues requests for proposals to contractors in the BPA that are specific to their areas of work. When the government decides to move forward with a contractor's proposal, they enter a contract for a specified amount of work.³¹

Good Neighbor Authority (GNA) agreements

GNA agreements allow states, counties, or tribes to perform restoration-oriented work on Forest Service lands.³² States (but not tribes or counties) are authorized to retain revenues from commercial restoration activities (generally timber sales) to fund the implementation of non-commercial restoration activities, monitoring, or restoration-oriented planning on national forest land.³³

638 agreement

This tool enables the Forest Service to enter into contracts with federally recognized tribes or tribal organizations under the 1975 Indian Self-Determination and Education Assistance Act.³⁴ Though the agency enters into contracts with tribes, this is a non-**procurement** instrument and so the agency considers it an agreement.³⁵ Federal law requires that 638 agreements be used to implement projects that are NEPA-approved and were proposed under the Tribal Forest Protection Act.³⁶

Participating agreements or challenge cost-share agreements

Both of these agreement types enable the Forest Service to partner with external entities on mutually beneficial work across a range of focal areas including forest health, habitat enhancement, and workforce development.³⁷

Administrative use permits

In certain cases, the agency is permitted to dispose of timber through an administrative use permit, which allows timber to be sold for less than the agency's established minimum rate.³⁸ Administrative use permits may be used to accomplish forest restoration, among other purposes.³⁹ If conditions warrant, the administrative use avenue may also be used to offer a limited amount of timber for free.⁴⁰

SPOTLIGHT: IMPLEMENTATION MECHANISM DECISION-MAKING FACTORS

Forest Service specialists consider a number of factors in determining which implementation mechanism they will use to carry out activities analyzed and approved through the NEPA process. Those factors include:

Timber value and operational costs

Estimated timber revenue and anticipated harvesting or other forest treatment costs will often influence whether vegetation treatments will be implemented via a timber sale or other commercial mechanism, or whether they will be considered service work.⁴¹ In timber sales, for example, timber managers aim to create sales that will garner bids from purchasers, so the value of timber in a sale area needs to be greater than the costs to harvest it and perform associated road and post-sale restoration work.⁴² If costs are estimated to be greater than the value of a proposed sale, the agency may consider a different implementation mechanism.⁴³ Timber value depends on the species, grade, and usable timber volume planned for removal, while costs depend on factors like logging systems to be used, complexity of the silvicultural prescription, amount of associated roadwork and required restoration, and **hauling** distance to a sawmill or other processing facility.⁴⁴ Sale preparation crews usually develop general rules for estimating costs and timber revenues within a proposed sale area, enabling them to determine whether or not it can be offered as a profitable sale early on in the process, rather than waiting until a more extensive appraisal (explained below).⁴⁵

Landscape conditions

Locations of existing roads, topography, proximity to log processing facilities, and anticipated logging systems will affect anticipated costs of a given project, which is a key factor in how the agency decides on an implementation mechanism.⁴⁶ Steep slopes without road access, for example, might require helicopter logging that costs more than the value of the timber, thus requiring completion via an IRSC, GNA, or service contract.⁴⁷

Forest or district-level practices

Some forests and districts have guidance or goals related to minimum volume amounts or number of projects offered through the stewardship or GNA authorities, for example.⁴⁸

Partnership tradeoffs

There are various costs and benefits of working with a partner through an agreement mechanism as opposed to a contract. For example, agreements often take additional time and coordination to set up but establish an avenue for partners to bring additional funding and unique capabilities to work on national forests.⁴⁹

Benefits or drawbacks of bundling commercial and non-commercial work

Bundling activities such as commercial harvest and pre-commercial thinning into a single contract may be more efficient or allow the agency more flexibility in the sequencing and timing those activities, in which case the agency may consider using a stewardship contract.⁵⁰ In other cases, resource specialists may prefer to implement non-commercial activities via individual service contracts that enable them to more directly oversee that specific work product.⁵¹



Funding for non-commercial work

Because there is a general lack of appropriated funding for service work, the Forest Service often considers opportunities for funding non-commercial activities as it weighs the pros and cons of different implementation mechanisms.⁵² Stewardship contracts, for example, may be used to bundle service work with commercial activities while timber sales produce revenues that are allocated to various **permanent and trust funds**, which are an important funding source for standalone service contracts.⁵³

Local stakeholder considerations

Line officers may take into account the stated preferences of local stakeholders, including county commissions and collaborative groups in deciding between different implementation mechanisms.⁵⁴ Different stakeholders may have certain reasons for preferring one mechanism over another. For example, collaborative groups may advocate use of stewardship contracting to prioritize best value and local benefit in contractor selection.⁵⁵

SPOTLIGHT: PROJECT DESIGN

Alongside decision-making on implementation mechanisms, agency staff must determine which activities and operational units to package together in each timber sale, contract, or agreement project. Factors that influence the final design of a project include:

Timber value and operational costs

Estimated operational costs and revenues often influence which areas and activities are included in a sale, contract, or agreement.⁵⁶ In an Integrated Resource Timber Contract, for example, operational units and activities will be included or dropped in order to ensure the estimated value of the timber is greater than the associated mandatory service work.⁵⁷ Expected costs also influence the design of service contracts because the agency has to develop a scope of work that is commensurate with the amount of available funding.⁵⁸

Landscape conditions

Topography, road access, and potential haul routes influence which locations are included in a project based on economic and operational feasibility and efficiency.⁵⁹ For example, operational units will often be grouped close to haul routes and close to one another to make it easier for **operators** to move from unit to unit and haul logs and other forest products to a sawmill or other processing facility.⁶⁰ Units where landscape conditions make treatments more expensive may be dropped if timber managers determine that they make a commercial project uneconomical.⁶¹

Subsequent activities

A project may be designed to facilitate activities that take place sequentially, with one necessarily following the other. For example, a NEPA decision often calls for prescribed burning to follow vegetation treatments in order to further reduce fuel loads and improve resiliency to wildfire and other disturbances. Fuels and timber managers may work together to group and locate vegetation treatments to create the large, contiguous blocks of fire-ready land that are needed for prescribed burns.⁶²



SPOTLIGHT: TIMING AND PRIORITIZATION

Forest Service staff consider a number of factors in determining the timing and prioritization of project activities and locations. These considerations are closely connected with decision-making related to implementation mechanism and project design and include:

Targets

Forests receive annual targets for timber volume and for acres where fuel conditions were reduced or maintained. Activities may be scheduled or prioritized based on potential to help achieve those targets.⁶³

Commercial vs non-commercial

Commercial work usually gets prioritized and scheduled first, given that timber revenues are important for supporting agency operations and other service work.⁶⁴ Service work most often happens after the completion of commercial work and, if not bundled with commercial work through a timber sale, contract, or agreement, is usually pursued opportunistically, given unreliable and insufficient funding.⁶⁵ Thus, timelines for completing non-commercial work can be less predictable and significantly longer than those for commercial work. Some forests use a separate master list to keep track of non-commercial activities that aren't bundled with commercial work so staff can reference them when available funding or implementation opportunities come up.⁶⁶

Funding availability

The amount and type of available funding affects how much of any given type of work the Forest Service can plan to accomplish each year.⁶⁷ Additionally, certain activities may be prioritized over others due to their alignment with funding programs like the Collaborative Forest Landscape Restoration Program or the Joint Chiefs Landscape Restoration Partnership.⁶⁸

Alignment with priorities and priority areas

Regions, forests, and districts have a range of processes and plans that identify priority areas for work.⁶⁹ Those include Shared Stewardship priority areas, wildfire risk assessments, and participatory mapping and prioritization processes between agency staff, local cooperators and collaborative groups.

Necessary layout, preparation, plans, and surveys

Surveys, (such as those for wildlife, botany, or archeological artifacts), burn plans for prescribed fire, and unit preparation activities such as boundary marking and buffer area flagging are examples of additional requirements that need to be fulfilled before treatment activities can take place.⁷⁰ The need to complete those requirements may delay implementation of a potential body of work or activity.

Date of NEPA decision

Some districts and forests prioritize the completion of work associated with older NEPA decisions waiting to be implemented, often called **NEPA shelf stock**.⁷¹

Seasonality

Resource protection requirements and other mitigation measures in NEPA documents often limit activities to certain seasons or certain types of weather.⁷² For example, logging on certain soil types is only allowed during certain months of the year; mechanical operations are often limited during wildlife nesting or mating seasons; and prescribed fire activities must comply with a multitude of season and weather-dependent factors.

Implementation Preparation



This set of steps includes on-the-ground activities as well as more specific planning needed to prepare a project for inclusion in a sale, contract, or agreement. Various aspects of the project, such as the exact location of temporary roads, log landings, and treatment areas may need to be changed or adapted as agency staff compare on-the-ground conditions with the activities outlined in the NEPA document.

Silvicultural Prescription Development

Any activity that involves cutting, burning, establishing, or otherwise modifying forest vegetation must follow a silvicultural prescription.⁷³ Prescriptions are written by silviculturists and describe a forest stand's current and desired condition and present instructions for modifying tree density, species composition, and/or stand structure to achieve the desired condition.⁷⁴ These instructions may address, for example, aspects such as spacing between trees, creation of tree groupings or openings, and retention of snags or downed wood for species habitat.⁷⁵ In developing prescriptions, silviculturists must incorporate a variety of considerations, including those related to wildlife habitat, recreation needs, logging equipment capabilities, and soil type.⁷⁶ That being the case, this process requires close communication between the silviculturist and a variety of resource specialists about desired outcomes and potential impacts of forest treatments.⁷⁷

Prescription development may begin during a NEPA analysis, though it cannot be finalized until the decision is signed.⁷⁸ NEPA documents will vary in how specifically they dictate certain

aspects of prescriptions, such as species preferences or tree diameters above which trees cannot be cut. The prescription document will also incorporate, or go hand in hand with, project design criteria, best management practices, and any other mitigation measures that are included in the NEPA decision document and/or supporting analysis.⁷⁹ Often, silviculturists will work from a standard set of previously developed prescriptions, then modify them based on specific requirements associated with the location, management direction, evolving science, or collaborative input.⁸⁰

“Importantly, all designation methods require some interpretation of the marking guides—either by marking crews or logging operators—and the same prescription can produce very different results based on the designation method, the operator, or the marking crew.”

Marking Guide Preparation

Marking guides are prepared by the silviculturist in tandem with the silvicultural prescription. Marking guides are used by marking crews and operators to determine which trees to leave or cut.⁸¹ These guides clearly outline cutting instructions that are directly based on, and are usually identical to, what is written in the associated silvicultural prescription.⁸² Marking guides for each operational unit are included in timber sales or service contracts and are used by timber cruisers to determine the total harvestable volume in a sale.⁸³

Designation Method Determination

The designation method, which is also determined around the same time as the silvicultural prescription, dictates how, and by who, trees will be chosen for cutting. Designation method may be specified in the NEPA document, or selected post-decision by the silviculturist in consultation with other resources staff.⁸⁴ Tree designation decisions are based on their cost and resource requirements and the nature of the prescription, among other factors. Importantly, all designation methods require some interpretation of the marking guides—either by marking crews or logging operators—and the same prescription can produce very different results based on the designation method, the operator, or the marking crew.⁸⁵

There are four ways to designate trees to be cut.⁸⁶

- Individual tree marking involves marking crews spraying a band of colored paint on individual trees, with different colors indicating whether the operator should cut, leave, or avoid a tree.⁸⁷ Individual tree marking is almost never used for non-commercial tree thinning activities, given the time-intensive nature of marking trees and the low value of the trees to be removed.⁸⁸
- Virtual tree marking is a newer designation method that involves marking trees and units

digitally.⁸⁹ The operator uses a tablet or some other mechanism with GPS capabilities to identify trees marked for cutting based on what is indicated on the digital map.

- Under the **designation by prescription (DxP)** method, it is up to the operator -- instead of tree markers -- to select which trees to cut and leave based on the marking guidelines that describe the desired composition of the cutting unit post-harvest.⁹⁰ This method is more difficult to carry out with complex prescriptions and the silviculturist often needs to work directly with sale administrators and operators to make sure they understand the prescription.⁹¹ DxP is commonly used to thin a stand to a particular **basal area**, for example, while retaining healthy larger trees and prioritizing particular species.
- Under **designation by description (DxD)**, trees are designated to be cut or left uncut through descriptions of measurable characteristics of individual trees and/or how they compare to one another.⁹² Designations could reference species, stump diameter, spacing, damage class, or a combination of these factors and should be unambiguous, so that two different people reading it would always choose the same tree.⁹³ Common uses of DxD include thinning uniform stands of one species to a specific spacing or removing all of one product from a stand.⁹⁴



Unit Layout

In order to facilitate implementation, timber harvest or vegetation treatment projects are divided into smaller operational units. These operational units are designated areas on the landscape and are a primary means by which silvicultural prescriptions, resource protection measures, and other vegetation management actions are assigned to particular locations within a larger project area.⁹⁵ Unit boundaries are often designated in NEPA documents, but can also be defined during the implementation stage of a project within the side boards established through NEPA decision-making.⁹⁶ During a process called unit layout, pre-sale crews or silviculture or fuels staff assigned to contract development visit operational units to prepare them for vegetation treatments and assess how conditions on the ground compare to what was stated in planning documents, which could have been prepared without a specialist ever visiting that area.⁹⁷ As crews are going through this process, they often modify unit boundaries to meet management objectives outlined in NEPA documents.⁹⁸ They may remove areas of units that are

not operationally or financially feasible, which could be due to landscape features like rocky areas or steep slopes or the constraints and capabilities of the chosen logging system (discussed below).⁹⁹ Units also get modified as crews designate buffer or no-cut areas in order to protect resources such as streams or archeological sites.¹⁰⁰ Several agency staff said it is not uncommon for the total treatment acreage authorized in the NEPA document to be reduced by one quarter to one third as a result of this on-the-ground review.¹⁰¹ As they work their way through

“Several agency staff said it is not uncommon for the total treatment acreage authorized in the NEPA document to be reduced by one quarter to one third as a result of this on-the-ground review. ”

units, crews also paint trees to indicate unit and sale or contract area boundaries, mark trees that should be retained for special purposes such as wildlife habitat, use GPS units to calculate unit acreages (a practice called traversing), and mark trees that should be cut or

retained based on the silvicultural prescription (if trees are designated by individual tree marking).¹⁰² While the unit layout process is generally similar between commercial timber sales and service contracts, non-commercial vegetation treatments almost never involve individual tree marking and may also be laid out virtually.¹⁰³



Transportation Planning

In this step, Forest Service engineers finalize transportation plans and road maintenance needs for the upcoming project. These project-specific plans tier from the transportation or roads sections of NEPA documents, which establish the outer bounds of what is permitted in terms of permanent and temporary road locations and uses, improvements, openings, closures, and decommissioning.¹⁰⁴ Once the type

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and scope of project activities has been determined, engineers identify road improvement and maintenance needs based on anticipated timber haul volumes and equipment, weather conditions, soil type, drainage requirements, water quality protection, and other factors.¹⁰⁵ Road improvement and maintenance requirements that are related to timber removal are combined into what is often called a roads package.¹⁰⁶ The roads package is incorporated into a timber sale contract or IRTC as the responsibility of the purchaser.¹⁰⁷ If the purchaser opts out of completing the roadwork themselves, they must pay the Forest Service a pre-established amount to cover the cost for the agency to contract out those activities.¹⁰⁸ In IRSCs or service contracts, all road and trail construction, reconstruction, and maintenance is considered service work.¹⁰⁹

During the transportation planning process, engineers and logging systems specialists also

work together to identify timber haul routes and delineate potential locations for infrastructure such as temporary roads, corridors for cable logging, skid trails and **landings** that aren't specified in NEPA documents.¹¹⁰ This planning is closely intertwined with unit layout and logging systems planning (described below) because transportation systems must be designed to accommodate the chosen logging equipment and methods while unit boundaries and buffer zones can both influence and be influenced by logging systems and associated transportation infrastructure.¹¹¹ It is important to note that while Forest Service staff establish potential locations for features like temporary roads and logging corridors at this stage, the timber sale purchaser, service contractor, or agreement partner often has some flexibility to work with the timber sale administrator, contracting officer, or agreement program manager during implementation to adjust those locations based on factors such as ground conditions or logging feasibility.¹¹²





Logging Systems Planning

Logging systems refer to the equipment and methods used to harvest timber. The main types of logging systems are:

- Ground-based logging: During ground-based logging, large machines drag or carry felled material from where it is cut to a landing, where logs are stored until they are transported to a processing facility. Ground-based equipment is usually used on more gradual slopes and in less sensitive areas.¹¹³
- Skyline or cable logging: This method of logging involves the use of cables anchored at either end to transport harvested timber to a landing.¹¹⁴ The cables run along vertical corridors that are parallel to the slope of a hill or mountain and are cleared of trees so that logs can be easily transported.¹¹⁵ This method is often used on steep slopes that are difficult for ground-based equipment to traverse or where ground conditions are not suitable for such equipment.¹¹⁶

- Helicopter logging: The most cost-intensive method of logging, helicopter logging involves hooking felled trees to a wire rope that is attached to the helicopter and then flying the logs to a landing.¹¹⁷ This method is used in areas with limited road access, or where topography or other landscape conditions make ground or cable operations infeasible.¹¹⁸

“ The type of logging systems selected, and their associated capabilities and limitations, greatly influence overall costs of a project and the final determination of where treatments will occur. ”

The logging system used to implement a given activity depends on the silvicultural prescription, road access, level of acceptable disturbance, and topography, among other factors.¹¹⁹ Like transportation planning, logging systems plans are often initiated during the development of a proposed action and are evaluated as part of the NEPA analysis.¹²⁰ During post-NEPA implemen-

tation preparation, a logging systems specialist finalizes the planned logging methods based on what is outlined in the NEPA document and any adjustments that are necessary due to post-NEPA modifications to unit design, new information about on-the ground conditions, equipment cost and availability, or other factors.¹²¹ Logging systems may be modified as long as the alternative and its potential impacts were analyzed during NEPA and the modification accomplishes the desired outcomes stated in the NEPA documents.¹²²

The type of logging systems selected, and their associated capabilities and limitations, greatly influence overall costs of a project and the final determination of where treatments will occur.¹²³ If it is determined that logging equipment can't access certain parts of a unit, for example, or if the chosen logging system is deemed too costly compared to the anticipated value of the timber, part or all of that unit may be dropped from a project.¹²⁴ Logging systems also may influence how a prescription will be developed and carried out, and in some cases the silviculturist may need to modify a prescription if it isn't feasible with the designated logging system.¹²⁵ Conversely, the logging system for a particular area may have to be modified based on the final design of the operational units.¹²⁶



Data Collection and Surveys

Depending on the depth and specificity of various aspects of the NEPA analysis, resource specialists may need to conduct additional fieldwork to ground-truth planning documents.¹²⁷ For example, they may need to further assess landscape features like soil type or ephemeral stream locations in order to determine the final design of units, transportation systems, prescriptions, or logging systems.¹²⁸ Additionally, it is common for NEPA decisions to condition the start of some activities on the completion of additional surveys, such as heritage or archeology surveys.¹²⁹ Those processes and protocols would be explained in the NEPA document and would need to be completed during this phase as well.¹³⁰

Cruising (commercial projects only)

After unit layout and silvicultural prescriptions have been finalized on commercial projects, the timber sale or stewardship contract preparation team will do a formal assessment of the project area to determine the quantity and quality of timber to be offered. This assessment is termed **cruising** and happens through two main methods. The more common is area-based cruising, in which cruisers calculate per-acre tree volume and other information based on data collected from several sample plots that are extrapolated to the entire project area.¹³¹ Less common - and more resource intensive - is tree-based cruising, which requires crews to tally all trees within a unit, then examine and measure a random sampling of trees in order to calculate an estimated volume.¹³²

The cruising process is intended to collect data on tree diameters and heights, species type, defects, grade (generally saw wood, non-saw wood, and pulpwood), and form class (the shape of the trunk).¹³³ The amount of usable timber in a project area (and thus the amount of timber the purchaser can be required to pay for and remove) is determined by merchantability specifications for each tree species and grade.¹³⁴ Those

specifications establish length and diameter measurements above which the timber is considered to be usable and are based on an agency determination of what a mill or wood products manufacturer would purchase.¹³⁵ However, merchantability specifications can be problematic (and often are) when they don't align with the size or length of sawlogs that are usable by local

“However, merchantability specifications can be problematic (and often are) when they don't align with the size or length of sawlogs that are usable by local wood products industries. For example, agency standards (which are often set at the regional level) may state that any log of a certain diameter that is greater than 8 feet long must be classified as merchantable, while the minimum log length preferred by mills is much longer than that.”

wood products industries.¹³⁶ For example, agency standards (which are often set at the regional level) may state that any log of a certain diameter that is greater than 8 feet long must be classified as merchantable, while the minimum log length preferred by mills is much longer than that.¹³⁷

Appraisal (commercial projects only)

The appraisal process involves estimating the fair market value of timber that is to be included in a timber sale or stewardship contract or agreement.¹³⁸ Appraisals, which are only necessary for commercial activities, are based on data about the grade and volume of usable timber that is collected during the cruising process.¹³⁹ The primary appraisal method used by the Forest Service, **transaction evidence appraisal**, aims to estimate the fair market value of the timber based on bid rates and logging costs from past timber sales in the area.¹⁴⁰ Key factors considered in producing a final appraisal figure include:

- The value of each species, grade, and form class based on previous sales during a certain time period and within a certain area around the proposed timber project.¹⁴¹ These are known as the **base period prices** and are informed by regularly updated state or regional reports as well as local data the forest gathers from past sales.¹⁴²
- Costs related to harvesting and transporting timber that have to be covered by the contractor and thus reduce the overall profit margins of a sale or contract.¹⁴³ Those include the equipment and labor costs of **felling, yarding, skidding**, and hauling timber as well as road maintenance and construction or reconstruction costs.¹⁴⁴
- Various required deposits for activities such as essential reforestation, engineering services, and brush disposal.¹⁴⁵
- Adjustments in order to account for unique conditions and characteristics of a sale (e.g., location relative to viable markets) and other factors such as potential oversights in the appraisal, current market conditions, and the need to encourage sufficient competition.¹⁴⁶

In a timber sale or IRTC, the final sale price is reflected in what is called the **advertised rate**.¹⁴⁷ In an IRSC, this is termed the minimum acceptable offer for timber.¹⁴⁸ However, this advertised rate may need to be increased beyond what is indicated by appraisal calculations in order to comply with **base rates** for the material. Base rates represent the lowest price that federal timber may be sold and are the highest of either: a) The minimum rate for species and classes of material set for each forest by the Washington Office or the Regional Office or b) The calculated sum of required regeneration or reforestation costs, plus timber property value, plus the \$0.25 per hundred cubic feet (ccf) required deposit to the **National Forest Fund (NFF)**.¹⁴⁹ Base rates apply to all commercial timber offerings except for qualified salvage sales and timber offered through administrative use permits.¹⁵⁰ When an appraisal is complete, the agency produces an appraisal report that is publicly available and

summarizes the cost estimates, product prices, and adjustments used to calculate the final appraised value.¹⁵¹

While the appraisal establishes a final value for a commercial project, economic analyses of timber value, harvesting, and hauling costs, and other required payments occur throughout the project development process.¹⁵² As mentioned in the previous implementation planning and preparation steps, sale and contract preparation teams and other specialists are constantly weighing costs and timber value as they design projects and units, prescriptions, logging systems, and transportation plans.¹⁵³ Each of those elements may be

tweaked or adjusted to make commercial projects more economically viable.¹⁵⁴

In discussing the appraisal process, those inside and outside the agency noted that the processes and sources used in appraisals sometimes lag behind or fail to reflect actual market conditions,

“All of these factors can produce appraisal prices out of sync with current conditions, which can pose challenges for putting together timber sales as well as stewardship contracts and agreements that are financially viable and will attract responses.”

don't capture the unique circumstances of a particular place, or don't accurately represent industry costs.¹⁵⁵ All of these factors can produce appraisal prices out of sync with current conditions, which can pose challenges for putting together timber sales as well

as stewardship contracts and agreements that are financially viable and will attract responses.¹⁵⁶



PERMANENT AND TRUST FUND COLLECTIONS AND OTHER DEPOSITS

The Forest Service is authorized to collect a portion of timber sale receipts as well as non-reimbursable deposits from purchasers of federal timber in order to support associated activities such as roads maintenance, preparation and administration of certain sales, and post-harvest restoration.¹⁵⁷ These are collectively referred to as permanent and trust funds.¹⁵⁸ These deposits and collections have historically been a crucial source of support for non-commercial service activities and other aspects of agency operations.¹⁵⁹

In order to collect timber receipts and deposits on a project, agency staff must develop plans that specify the activities that could or should be funded with permanent and trust fund dollars -- a process that occurs in the implementation preparation phase.¹⁶⁰ Minimum and/or maximum receipt collection and deposit amounts are based on the amount of required and desired work in these plans, though it is rare for a sale to generate enough timber receipts to fund all planned activities.¹⁶¹ Line officers also have some discretion over how to allocate timber revenues between funds based on local needs and other considerations that may go beyond the content of each plan.¹⁶² Once completed, permanent and trust fund plans and activities get included in an appropriate contract or agreement document, depending on the implementation mechanism.¹⁶³ The most common types of deposits and collections are:

- **Roads-related deposits:** The agency can require different deposits from a timber sale purchaser related to road maintenance and planning. One type of deposit funds the maintenance of asphalt roads that are used during timber hauling, though that amount can be decreased if necessary for sale feasibility.¹⁶⁴ Another deposit type funds the engineering services required to design and administer the roads package.¹⁶⁵ Finally, if the purchaser is not willing or able to complete maintenance and improvement work identified in the roads package, some forests allow the option of collecting a deposit to fund the agency to complete that work or contract it out.¹⁶⁶ If Forest Service staff anticipate that the value of the timber in a sale will not exceed roads costs, it is common for the agency to decrease the required deposit for asphalt road maintenance or reduce maintenance requirements (and thus maintenance costs) for other forest roads in order to make a sale more economically feasible.¹⁶⁷
- **Brush disposal deposits:** The Brush Disposal Act requires purchasers to make deposits to pay for the disposal of unwanted slash, brush, and other debris that result from logging within the sale or contract area.¹⁶⁸ To estimate needed brush disposal collection amounts, agency fuels personnel develop brush disposal plans, which can include chipping slash, piling fuels, burning piles, or broadcast burning.¹⁶⁹ Purchasers are either required to perform brush disposal activities themselves, cover the cost for the Forest Service to accomplish those tasks, or a mix of the two.¹⁷⁰ Reducing brush disposal obligations is another strategy the agency uses to make a timber sale more attractive and economically feasible for purchasers.¹⁷¹

- ***Knutson-Vandenberg (K-V) collections:*** The Knutson-Vandenberg Act authorizes the Forest Service to collect a portion of timber sale revenues to pay for reforestation activities (e.g., tree planting, weed removal, seed sowing) as well as a broader array of post-sale restoration needs, including watershed restoration, wildlife habitat, range improvement, and weed treatments.¹⁷² Activities funded through **Knutson-Vandenberg (K-V) collections** must be identified and prioritized in a sale area improvement (SAI) plan, must be located within a timber sale area, and must have been identified and analyzed in a NEPA decision.¹⁷³ There are two tiers of K-V activities: required reforestation activities associated with establishing a new tree stand and non-required restoration activities that accomplish more general resource improvements.¹⁷⁴ Required reforestation activities can be included as mandatory expenses in a timber sale, while non-required K-V activities are funded with timber receipts as they are available.¹⁷⁵ Because it is common for the cost of proposed K-V activities to exceed the amount of timber revenues available, this second category of K-V activities is funded by order of highest priority.¹⁷⁶ Available K-V funds can also be used to address identified K-V activities elsewhere in the region where the commercial project took place.¹⁷⁷ When a contract ends or is terminated, any unfunded K-V work is no longer eligible for those funds.¹⁷⁸
- ***Salvage sale collections:*** The salvage sale program is intended to support the preparation and administration of salvage timber sales, which are those that involve the removal of insect-infested, dead, damaged, or down trees as well as associated trees that pose a risk to overall stand health.¹⁷⁹ Salvage sales are intended to be an avenue for removing such trees as quickly as possible in order to capture economic value that would otherwise be lost.¹⁸⁰ In order to support these types of sales, the National Forest Management Act allows the Forest Service to collect a portion of timber receipts from salvage sales to cover the cost of designing, engineering, preparing, and supervising future salvage sales and the necessary roads to support them.¹⁸¹ The agency estimates necessary **salvage sale collection** amounts based on the previous year's actual costs and anticipated salvage sale needs developed by the forest.¹⁸² Like non-essential K-V funds, the amount of salvage sale funds collected on a project depends on the final price of the timber and any other collections and deposits that are required to be made.¹⁸³
- ***Retained receipts:*** Under Stewardship Authority, individual forests are allowed to keep timber revenues that exceed the cost of mandatory service work included in a stewardship project.¹⁸⁴ These revenues are called retained receipts and must be used to complete service work on other stewardship projects.¹⁸⁵ Importantly for collaborative groups, retained receipts may be used for project-level implementation or effectiveness monitoring and to support the collaborative process by paying for costs such as facilitation, meeting rooms, or travel directly related to an approved stewardship project.¹⁸⁶ Retained receipts are typically collected from IRTCs and are deposited into a forest's stewardship fund.¹⁸⁷ While these dollars are usually used on the same administrative unit in which they were generated, they can be used across multiple forests if a stewardship project is structured that way.¹⁸⁸

Contract or Agreement Development and Offering



Any activities on the national forest that the Forest Service doesn't perform itself are implemented by other entities through either contracts or agreements.¹⁸⁹ Contracts are used by the agency to sell trees and other forest products (via timber sales, for example) or to purchase goods or services.¹⁹⁰ Agreements are used by the Forest Service to partner with a non-agency entity. They usually involve resource contributions (e.g., funding, staff time, indirect costs) by both parties, they generally may not be used for profit-making endeavors, and they often require mutual interest and mutual benefit.¹⁹¹ Following the implementation planning and preparation phase,

agency staff set about developing contracts or agreements that capture all project activities, specifications, and requirements through clear, enforceable language.¹⁹² The wording in these documents is crucial in determining how the intended outcomes of the NEPA analysis and decision will be realized on the ground. Once finalized, agreements move forward into implementation while contracts usually go through some type of public advertisement process, after which the agency evaluates responses and selects a contractor or timber sale purchaser.¹⁹³ As projects move into the contract and agreement development phase from implementation preparation, responsibility transitions from the line officer and their team of resource specialists to a designated contracting officer and their sale or contract administration team or, in the case of agreements, a grants and agreements specialist and a program manager.¹⁹⁴ Because timber sales, service contracts, and agreements have distinct characteristics and associated processes, some of the following sections include subsections to clearly explain any relevant differences between these types of implementation mechanisms.

Contract or Agreement Document Development

Developing contract or agreement documents involves translating management activities, desired outcomes, and special requirements like project design criteria into specifications that are clearly defined, measurable, and enforceable.¹⁹⁵ Some items may be categorized as optional, subject to factors such as revenue generated, market conditions, or appropriated dollars available.¹⁹⁶ Additionally, timber sale contract development teams must evaluate if a sale should be offered as a small business **set aside**, or reserved for specific socioeconomic groups or categories

of businesses.¹⁹⁷ Before contracts or agreements are finalized, interviewees said it is beneficial if specialists from the NEPA interdisciplinary team, engineering specialists, and representatives from sale preparation and administration teams review those documents to ensure desired outcomes and requirements are clearly communicated and understood.¹⁹⁸ The agency also may host public pre-offer meetings for timber sales, service contracts, or stewardship contracts where potential purchasers or contractors can ask questions about the sale or contract, provide input on its viability, or identify potential challenges with the contract terms that the agency may want to consider.¹⁹⁹

The following is information specific to development of certain implementation mechanisms.

- **Timber sale:** Timber sales are implemented via contracts, which are overseen by timber contracting officers and timber sale administrators and are subject to a different title in the Code of Federal Regulations than service contracts.²⁰⁰ The development of timber sale contracts tends to be closely focused on developing an economically viable sale package that will attract bidders.²⁰¹
- **Service contracts:** Also referred to as procurement contracts, service contracts are overseen by contracting officers and contracting officers' representatives and are subject to the same federal acquisitions regulations that apply across government agencies.²⁰² Unlike timber sales, service contracts may be evaluated based on best value, which considers price and non-price criteria.²⁰³ In that case, agency staff developing the contract must decide on screening and evaluation criteria other than cost that will be used to evaluate responses to the contract solicitation.²⁰⁴ Potential best value criteria include technical approach, work quality, past performance, and potential socio-economic benefit to the local community.²⁰⁵ Local preference for contractors can be incorporated into this evaluation method as well.²⁰⁶
- **Stewardship contracts:** Integrated Resource Timber Contracts (IRTCs) and Integrated Resource Service Contracts (IRSCs) incorporate elements of timber sales and service work and are thus subject to a combination of timber sale and federal acquisitions regulations or

just timber sale regulations, depending on the contract type.²⁰⁷ Any products removed under either of these contracts must be appraised and offered at their fair market value.²⁰⁸ Stewardship authority also sets certain requirements for stewardship contracts, including that they be awarded based on best value criteria.²⁰⁹ These criteria are established in the contract and are often developed and defined through a collaborative process because Forest Service directives require that collaboration be a part of stewardship project planning and implementation.²¹⁰

- **Agreements:** Agreements differ from procurement and timber sales in how they are developed and structured. For example, they are developed through discussions and negotiations with the non-federal partnering entity(ies), as opposed to the arms-length relationship required with timber sales.²¹¹ Instead of contract specifications, agreements include components such as financial plans, partner responsibilities, deliverables, and project description that includes methodology and technical specifications.²¹² Agreements are overseen by an agreement manager.²¹³ Once an agreement is finalized between the partner and the Forest Service, the partner typically enters into a contract with an operator to complete the agreed-upon work.²¹⁴

“As projects move into the contract and agreement development phase from implementation preparation, responsibility transitions from the line officer and their team of resource specialists to a designated contracting officer and their sale or contract administration team or, in the case of agreements, a grants and agreements specialist and a program manager.”

After contracts are signed they can be modified, though doing so can be a complex process involving multiple approvals.²¹⁵ Agreements are generally easier to modify as long as changes made fall within the scope of the original agreement.²¹⁶

Timber Sale Advertisement or Release of Contract Solicitation

Processes in this step vary by implementation mechanism.

- **Timber sale:** Any timber sales with an appraised value of over \$10,000 must be publicly advertised and offered through a competitive bidding process.²¹⁷ For each sale, the Forest Service develops a public advertisement and a bid package, which includes a sale prospectus that highlights unique or notable features of a sale, a sample contract, and forms purchasers would submit to bid on the sale.²¹⁸ Timber sales without unusual circumstances or interest must be advertised for a minimum of 30 days.²¹⁹ For these sales, Forest Service staff must deliver the sale prospectus and prospective bidder letter to prospective bidders as well as others who have asked to receive notice of sale offerings.²²⁰ Sales of unusual interest must be advertised for 45-90 days and advertisements must also be published in trade journals, as well as in local newspapers.²²¹
- **Contracts:** The Forest Service can solicit contract bids through an invitation for bid, a request for quote, or a request for proposal.²²² The latter two are more frequently used because they allow the agency to request more information from bidders (such as how they propose to complete the project and the experience and skill level of their employees) and to evaluate bidders on best value criteria, rather than price alone.²²³ A typical contract solicitation includes project requirements, terms, and conditions; information requested of the offeror; criteria used to evaluate solicitation responses; and any opportunity available for offerors to propose alternative approaches to achieving the contract's desired outcomes.²²⁴ Contract opportunities are advertised on the federal government's online system for award management.²²⁵
- **Stewardship contracts:** IRTCs are advertised via a similar process as traditional timber sales while IRSCs are posted in the online system for award management, along with other ser-

vice contracts.²²⁶ Both must be publicly offered for 30 days or longer, depending on the complexity of the project.²²⁷

- **Agreements:** Agreements, such as stewardship agreements, Good Neighbor Agreements and 638 agreements, are entered into through a non-competitive process.

Pre-bid Meetings or Field Trips

After a timber sale advertisement or contract solicitation is released, the agency may host field trips to the work site or hold meetings that offer potential purchasers or contract bidders the opportunity to meet with agency staff and ask questions about a sale or contract opportunity.²²⁸ These are open for the public to attend.²²⁹



Accept and Evaluate Bids or Solicitation Responses

Processes in this step vary by implementation mechanism.

- **Timber sale:** Timber sale bids must be submitted by mail or delivered by hand - emailed bids are not accepted.²³⁰ Traditional timber sales must be awarded to the highest bidder who also meets all the conditions of the sale, unless all bids are rejected.²³¹ At a stated date and time, the designated sale officer opens and publicly reviews these sealed bids.²³² The officer may determine the apparent high

bidder based only on the information submitted or, on some forests in the West, the agency may subsequently conduct an oral auction, which can significantly affect the final price of the sale.²³³ This oral auction is held among only the bidders who initially submitted sealed bids and the sale is awarded to the highest bidder from that process.²³⁴

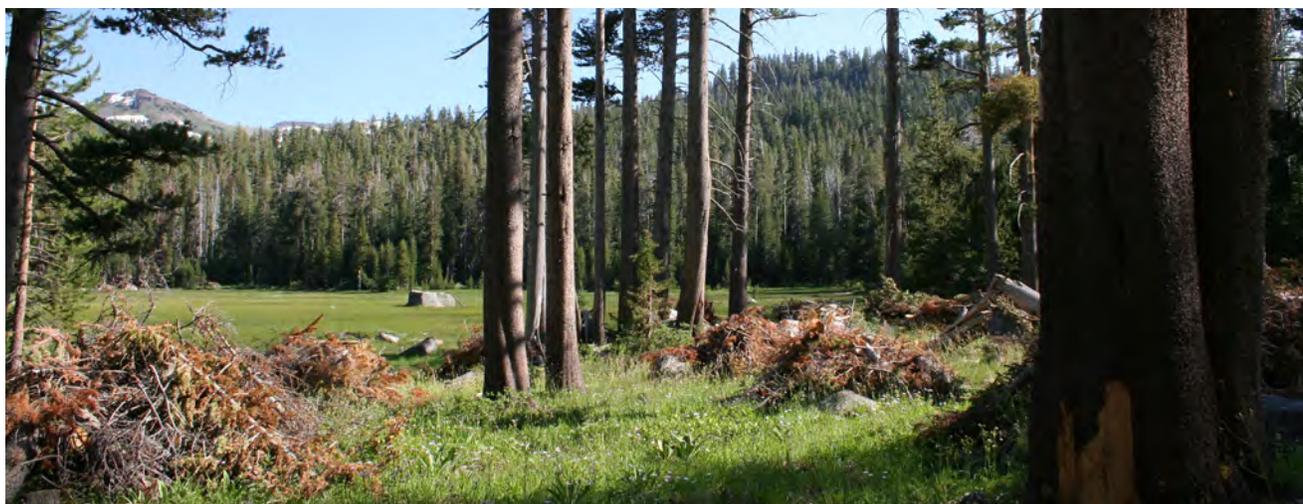
- **Stewardship contract:** All stewardship contracts are evaluated and awarded on a best value basis, which considers both price and non-price criteria that are tailored to the project and its intended outcomes.²³⁵ In order to select a contractor, a team that includes resource and operation specialists evaluate all stewardship contract technical proposals based on the set of criteria established during contract development.²³⁶ The best value determination also includes a review of the contractors' financial and logistical ability to fulfill the contract.²³⁷
- **Service contract:** If a service contract is to be evaluated based on best value criteria (rather than price and technical acceptability alone), agency representatives review and evaluate responses to the solicitation based on those pre-established criteria.²³⁸ Before selecting a service contractor, the agency is allowed to negotiate with bidders, or ask them for clarifications or further information.²³⁹
- **Agreements:** Evaluation of responses or bids is not applicable to agreements.

Prepare a Bid Abstract (timber sales and sometimes IRTCs)

Once a timber sale has been awarded, the agency prepares an abstract of bids received and distributes it to interested parties.²⁴⁰ Some forests also do this for IRTCs.²⁴¹ This report includes information about the sale (location, estimated volume, species and product offered etc.), minimum and advertised rate, and the total bid value submitted by each of the bidders.²⁴²

No Bid (timber sale and IRTCs only)

If a timber sale or IRTC does not receive any bids, it can be reoffered without further advertisement.²⁴³ Bids (or offers and technical proposals in the case of IRTCs) must be received within one year of the original advertisement.²⁴⁴ Before reoffering a sale or IRTC, agency staff go through an assessment of sale development processes and sale or contract terms to determine potential reasons for the no-bid outcome.²⁴⁵ Based on that assessment, staff may adjust the amount of restoration work (brush disposal, required reforestation etc.), required roadwork, or other elements to make the sale or IRTC more attractive in subsequent offerings.²⁴⁶ They also may choose to repackage or reoffer the work via another implementation mechanism, such as a Good Neighbor Agreement or a service contract.



Project Implementation and Monitoring



The implementation of planned activities represents the culmination of the project planning, implementation preparation, and contract development phases. For work performed by non-agency entities, implementation of agreed-upon activities may begin after finalization of a contract (timber sale, service, etc.) or agreement. Implementation also may be preceded or followed by monitoring activities designed to assess the impacts and effectiveness of management actions.

In discussing this final stage of the project lifecycle, it is important to note that

the inclusion of activities in a NEPA-approved project does not imply a guarantee of when or if they will be implemented on the ground. Given the timelines of various implementation mechanisms, Forest Service staff and budget constraints, and the logistical realities of coordinating management actions, it can take a decade or more for the agency to begin implementing some of the activities—particularly non-commercial activities—approved in a decision document.²⁴⁷ Some activities included in NEPA decisions may never be completed, may be deemed unnecessary based on the effects of other activities or events, or may not be completed before the NEPA decision is deemed to be outdated or irrelevant due to changed conditions.²⁴⁸

Implementation

Forest Service staff are closely involved with projects throughout implementation. As mentioned in the previous stage, Forest Service points of contact vary based on the implementation mechanism, but include contracting officer's representatives for service contracts and program managers for agreements.²⁴⁹ Before work begins on a sale, contract, or agreement, these points of contact meet with timber sale purchasers, contractors, or agreement partners to review the scope of work, specific contract provisions, and other expectations associated with the contract or agreement.²⁵⁰ As activities progress, the designated agency officials monitor work performance in

“In discussing this final stage of the project lifecycle, it is important to note that the inclusion of activities in a NEPA-approved project does not imply a guarantee of when or if they will be implemented on the ground.”

order to enforce contract terms (in the case of contracts) or ensure that the cooperator upholds programmatic and financial commitments (in the case of agreements).²⁵¹ These agency staff also work with timber sale purchasers, service contractors, or agreement partners regarding on-the-ground decisions or necessary modifications such as those related to the location of skid trails and landings, type of equipment used, or construction and decommissioning of temporary roads.²⁵² Over the course of a contract, sale, or agreement, timing of on-the-ground implementation is subject to a number of factors including seasonal restrictions and operating windows, the sequencing of pre- and post-harvest or thinning work, and unit or task order-specific timelines.

Monitoring

Implementation monitoring intends to assess the effects and effectiveness of Forest Service management actions.²⁵³ Monitoring can take a number of different forms, from methodical data collection to qualitative assessments made during field trips to a treatment site, and is used to address both biophysical and socioeconomic questions that help inform management actions.²⁵⁴ Monitoring requirements often originate from a forest's management plan (and the associated NEPA decision) but can also be included in project-level NEPA documents, with an example being monitoring requirements linked to adaptive management strategies.²⁵⁵ Adaptive management strategies involve implementing a management action and then monitoring the effects of that action for the purpose of learning and adjusting future management actions to better achieve desired outcomes.²⁵⁶ In addition to NEPA decisions for projects or forest management plans, key drivers of monitoring activities include:²⁵⁷

- Regional plans such as the Northwest Forest Plan.

- Programs such as the Collaborative Forest Landscape Restoration Program.
- The National Forest Management Act.
- Compliance requirements related to laws like the Endangered Species Act or the National Historic Preservation Act.
- The interests of a forest collaborative group or other partners.
- The responsibilities of Forest Service points of contact to ensure a contractor fulfills the terms of a sale or contract or that agreement partners uphold their respective commitments.

While an important task, Forest Service staff said monitoring is not consistently funded nor completed.²⁵⁸ Agency staff also said internal accountability for accomplishing monitoring tasks can be variable and outside partners often play a key role in emphasizing the importance of required monitoring and/or assisting with implementation of monitoring plans.²⁵⁹





CONCLUSION

The process of bringing a Forest Service project to fruition – from pre-NEPA planning through implementation and monitoring – requires many steps and spans multiple years. While the process is complex with many parallel processes and moving parts, we hope that greater knowledge of how the agency undertakes vegetation management projects may help collaborative groups and other partners better understand when and how they might engage with this important work.

Appendix

Additional documents related to collaborative engagement in Forest Service planning and/or implementation:

- A Roadmap For Collaboration Before, During and After the NEPA Process, *National Forest Foundation*
 - https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf
- Innovative Contracting: A Guide for Collaborative Groups and Community Partners, *Ecosystem Workforce Program*
 - http://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/QG_InnovativeContracting.pdf
- Forest Service Contracting: A Basic Guide for Restoration Practitioners, *Ecosystem Workforce Program*
 - <https://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/downloads/ContractGuideFinalReadersSecure.pdf>
- Collaborative engagement documents developed by the North Central Washington Forest Health Collaborative (WA) and the Lolo Restoration Committee (MT)
- Tracking Progress: The Monitoring Process Used in Collaborative Forest Landscape Restoration Projects in the Pacific Northwest Region, *Ecosystem Workforce Program*
 - https://ecoshare.info/uploads/ivmg/WP54_CFLRP_Monitoring_Process.pdf

Important Terms

Adaptive management: A management strategy that involves a cycle of planning, implementing, monitoring, evaluating, and incorporating new knowledge into management. After a management action is implemented, the effects are monitored for the purpose of learning and adjusting future management actions to better achieve desired outcomes.¹

Advertised rate: The minimum acceptable bid rates for timber, which are the rates at which timber is advertised. Advertised rates must be at least as high as base rates.²

Agency directives: Forest Service directives are the primary source of administrative direction to agency employees. The directives consist of the Forest Service Manual and Handbook, two series of documents that codify the agency's policy, practice, and procedure.³

Agreements: Agreements do not involve a competitive solicitation or bidding process and are developed between the Forest Service and a non-agency entity. They generally involve mutual interest and benefit for both partners or are used for activities that provide a public benefit.⁴

Basal area: The area of a given section of land that is occupied by the cross-section of tree trunks and stems, when measured at the breast height (4.5 ft) of a tree above the ground. Basal area is used as a method of measuring the volume of timber in a given stand.⁵

Base period price: The value that represents the average bid price of competitively sold timber sales in a particular area during a predetermined base period. The base period price is the starting point of appraisal.⁶

Base rate: The lowest rates of payment for timber that are authorized by the contract used. The base rate is the highest of either the applicable minimum rates or a combination of required K-V deposits for reforestation, plus timber property value, plus \$0.25 per hundred cubic feet.⁷

Best management practices: Practices that enable the implementation of a planned activity while still protecting the resource managed.⁸

Best value criteria: Method of evaluating solicitation responses that considers both price and non-price criteria in order to achieve the best value to the government. Those criteria include potential benefit to the local community, past performance, and work quality.⁹

Brush disposal plan: Outlines the activities needed to mitigate the fuel hazard caused by slash produced from timber harvest. Brush disposal activities include chipping, slash piling, and pile burning and are funded through brush disposal deposits associated with commercial activities.¹⁰

Categorical Exclusion (CE): Generally the least detailed and complex level of analysis that can only be used if a proposed action meets certain criteria.¹¹

Contract: A document that establishes a mutually binding legal relationship between a seller that is furnishing supplies or services and a buyer that is paying for them.¹²

Cruising: The process of measuring characteristics of forest stands such as tree size, volume, and quality in order to estimate the quantity and quality of timber to be offered in an upcoming sale.¹³

Decision document: Record that communicates the responsible official's decision on a proposed action based on the results of the NEPA analysis. There are different decision documents based on whether the proposed action is analyzed through a CE, EA or EIS.¹⁴

Decision Memo: Decision document for a Categorical Exclusion.¹⁵

Decision Notice: Decision document for an Environmental Assessment.¹⁶

Designation by description (DxD): Method of tree designation in which trees are designated to be cut or left uncut by describing measurable characteristics of individual trees and/or how they compare to one another.¹⁷

Designation by prescription (DxP): Method of tree designation in which trees are designated for harvest based on the prescription's desired composition of the unit following harvest. Operators are provided a marking guide based on the

prescription and given the responsibility to select which trees to cut and leave based on the guide.¹⁸

Environmental Assessment (EA): A document that the Forest Service must complete if a proposed action is not appropriate for a Categorical Exclusion and either does not have significant environmental effects or the significance of environmental effects is uncertain.¹⁹

Environmental Impact Statement (EIS): Must be prepared if a proposed action may or will have significant effects on the human environment.²⁰ The preparation of an EIS involves the most rigorous and complex level of analysis.

Felling: The process of cutting or uprooting standing trees.²¹

Finding of No Significant Impact (FONSI): A Finding of No Significant Impact presents the reasons why a proposed action will not have a significant environmental effect. This document provides the agency's necessary justification for not moving forward with an Environmental Impact Statement.²²

Hauling: Delivering logs or chips from a loading point to an unloading point such as a mill or other wood processing facility.²³

Implementation mechanism: Term used by the author of this guidebook to reference the various methods for implementing planned activities. Timber sales, service contracts, stewardship contracts, and agreements are all types of implementation mechanisms.

Interdisciplinary Team (ID Team): This is a team of specialists from various resource areas that are assembled to undertake the NEPA process for a proposed project. These specialists help develop the proposed action, respond to public comments, develop alternatives to the proposed action, and analyze potential effects of the proposed action and any alternatives.²⁴

Knutson-Vandenberg (K-V) collections: Timber sale receipts the Forest Service is authorized to collect to pay for post-sale reforestation and restoration activities.²⁵

Landing: Cleared area in a timber harvesting unit where felled logs are stacked and stored until they are transported to a sawmill or other processing facility.²⁶

Line officers: Agency staff with authority to decide upon or carry out a specific planning action.²⁷ There are line officers at each level of the agency, for example, district rangers at the district level, forest supervisors at the forest level, and regional foresters at the regional level.

Logging system: A method of logging, such as cable or skyline logging, ground-based or tractor logging, and helicopter logging.²⁸ Each type of logging system requires different equipment and comes with different costs, capabilities, environmental effects, and constraints.

Marking guide: Document that instructs tree markers or logging operators which trees to cut and/or leave based on the silvicultural prescription.²⁹

Mitigation measures: Measures that avoid, minimize, or compensate for the effects associated with a particular action described in an environmental document or record of decision and that have a nexus to those effects.³⁰

National Forest Fund (NFF): This national fund holds receipts from agency-managed resources and is used to satisfy agency obligations.³¹

NEPA shelf stock: A term used to denote planned management work that has been cleared for implementation through the NEPA process but has not yet been accomplished.³²

Operational unit: A designated area within which one or more activities occur. Also known as activity units, operational units act as a foundational organizational structure for implementation planning. For example, units are grouped together to establish areas to be included in timber sales, contracts, and agreements. Vegetation treatments are also often assigned and completed by the unit.³³

Operator: The owner or contractor of a logging operation that implements vegetation treatments; often synonymous with contractor.³⁴

Permanent and trust funds: Category of timber receipt collections and deposits that the Forest Service is authorized to retain to pay for a number of restoration, reforestation, administration, and infrastructure needs associated with sale activities.³⁵

Preferred alternative: The alternative or alternatives that represent the agency's preferred course of action after the completion of the environmental analysis portion of the NEPA process.³⁶

Procurement: The act of acquiring goods or services via a contract for use by the federal government. The terms procurement, service contracting, and acquisition are often used interchangeably in the context of this document.³⁷

Program of work: Term often used to describe the schedule of activities the agency has planned for planning and/or implementation. A NEPA program of work, for example, encompasses the management activities that the Forest Service intends to analyze via the NEPA process, along with a rough timeline.

Project: In the context of NEPA, this guidebook uses the term "project" to describe management activities that are grouped together for inclusion in a single proposed action that is evaluated via the NEPA process. In the context of post-NEPA implementation, this guidebook uses the term "project" to describe management activities that are part of the same organized effort with a common location, outputs, and time period, among other characteristics. According to these uses of the term, the Forest Service could implement several projects (a thinning project, a stream culvert project, a prescribed burning project, etc.) that were analyzed in a single NEPA document, or project.³⁸

Project design criteria: Parameters and guidelines for implementing site-specific activities to comply with the relevant land management plans.³⁹

Project initiation letter: A letter issued by the responsible official that formally signals the agency will move forward with an Environmental Assessment or Environmental Impact Statement for a given proposed action, and outlines plans and expectations for the process.⁴⁰

Proposed action: A formalized proposal for activities the agency would authorize or implement to address the purpose and need identified at the beginning of a NEPA analysis.⁴¹

Purpose and need statement: A concise statement developed at the outset of the NEPA process that explains the agency's rationale for proposing certain management actions.⁴²

Record of Decision: Decision document for an Environmental Impact Statement.⁴³

Responsible official: The designated Forest Service employee who has the authority to approve the purpose and need statement, the proposed action, and the range of alternatives in a NEPA process. The Responsible Official also has the authority to make and implement a decision on a proposed action.⁴⁴

Retained receipts: Timber revenues that remain after the exchange of goods for services in an integrated resource timber contract. These receipts can be used to fund restoration service work on other stewardship projects.⁴⁵

Sale area improvement (SAI) plan: Outlines reforestation and restoration needs associated with a timber sale. Items in this plan can be funded with K-V collections.⁴⁶

Salvage sale collections: Salvage timber sales are those that involve the removal of insect infested, dead, damaged or down trees, as well as associated trees that may pose a risk to overall stand health. The Forest Service is authorized to collect a portion of timber receipts from those sales to cover costs associated with future salvage sales.⁴⁷

Selected alternative: The alternative selected by the responsible official based on the NEPA analysis.⁴⁸

Scoping: The stage of the NEPA process through which the agency explores the scope of potential issues and effects that may be associated with the proposed action.⁴⁹

Service work: Work that does not have a commercial component, such as tree planting, pre-commercial thinning, trail maintenance, and stream restoration. Also referred to as non-commercial work.⁵⁰

Set asides: Procurement contracts and timber sales that are only offered to certain socioeconomic groups or categories of businesses such as those in Historically Underutilized Business (HUB) Zones.⁵¹

Significant: Several aspects of the NEPA process hinge on the significance of actions proposed by the Forest Service. The Council on Environmental Quality, which promulgates NEPA implementation regulations, requires considerations of both context and intensity in determining the significance of an action. Those are explained at 40 CFR 1508.27.⁵²

Silvicultural prescription: A document that describes instructions for vegetation management activities such as thinning, harvesting, planting, pruning, and prescribed burning.⁵³

Skidding: Dragging or trailing trees, usually from where they are cut to a landing or other location.⁵⁴

Solicitation: Any request to submit offers or quotations to the government.⁵⁵

Stand: A contiguous group of trees with similar characteristics and in a place with uniform site characteristics.⁵⁶ Forested stands are defined in agency databases and may be broken up into several units for the purpose of implementing management activities.⁵⁷

Timber receipts: The revenue from a timber sale.⁵⁸

Transaction evidence appraisal: Appraisal method designed to estimate the fair market value of timber based on information from past transactions.⁵⁹

Vegetation management: Activities that involve cutting, burning, establishing, or otherwise modifying forest vegetation.

Yarding: The process of hauling a log from the stump to a collection point.⁶⁰

Endnotes: Planning

1. Council on Environmental Quality. (2007) A Citizen's Guide to the NEPA. https://ceq.doe.gov/docs/get-involved/Citizens_Guide_Dec07.pdf; USDA Forest Service. (2021, October 27). National Environmental Policy Act 101: Overview of the Process and Public Participation Opportunities [PowerPoint slides]
2. USDA Forest Service. (2021, October 27). National Environmental Policy Act 101: Overview of the Process and Public Participation Opportunities [PowerPoint slides]
3. Ibid
4. Personal interviews
5. FSM 1500 Chapter 1560; Mills, M. & Nie, M. (2020). Bridges to a New Era; A Report on the Past, Present, and Potential Future of Tribal Co-Management on Federal Public Lands. Margery Hunter Brown Indian Law Clinic/Bolle Center for People and Forests, University of Montana.
6. FSM 1563.1
7. FSM 1500 Chapter 1560
8. FSM 1500 Chapter 1560
9. FSH 1509.13 Chapter 10
10. Joint Secretarial Order No. 3403 (November 15, 2021)
11. Ibid
12. FSM 1500 Chapter 1560; Personal interviews
13. Personal interviews
14. Joint Secretarial Order No. 3403 (November 15, 2021)
15. Personal interviews
16. Personal interviews
17. Personal interviews
18. Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf; Personal interviews
19. FSH 2409.17 Chapter 80; Personal interviews
20. USDA Forest Service. (n.d.) Basic Timber Sale Preparation Study Guide; Personal interviews
21. Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf; Barnhart, R. (2021, June 17) Timber Strategies Meeting: Timber Sale Preparation, Stewardship authority, Good Neighbor Authority & Tribal Forest Protection Act [PowerPoint slides]. USDA Forest Service; Personal interviews
22. Personal interviews
23. Personal interviews
24. Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf
25. Personal interviews
26. Personal interviews
27. Personal interviews
28. Personal interviews
29. Personal interviews
30. Personal interviews
31. Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf
32. Personal interviews
33. Personal interviews
34. FSH 1909.15 Chapter 10; Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf; USDA Forest Service (n.d.) National Environmental Policy Act (NEPA) Concepts. https://www.fs.fed.us/emc/nepa/fs_nepa_concepts/index.html
35. Ibid
36. Personal interviews
37. Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf; USDA Forest Service. (n.d.) Basic Timber Sale Preparation Study Guide
38. Personal interviews
39. FSH 1909.15 Chapter 10; Personal interviews
40. USDA Forest Service (n.d.) National Environmental Policy Act (NEPA) Concepts. https://www.fs.fed.us/emc/nepa/fs_nepa_concepts/index.html; Personal interviews
41. FSH 1909.15 Chapter 10; Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf

42. Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf; USDA Forest Service (n.d.) National Environmental Policy Act (NEPA) Concepts. https://www.fs.fed.us/emc/nepa/fs_nepa_concepts/index.html
43. Ibid
44. FSH 1909.15 Chapter 10
45. FSH 1909.15 Chapter 10; Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf
46. Brandt, L. & Schultz, C. (June, 2016). Climate Change Considerations in National Environmental Policy Act Analysis. U.S. Department of Agriculture, Forest Service, Climate Change Resource Center. www.fs.usda.gov/ccrc/topics/nepa; Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf
47. Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf
48. FSH 1909.15 Chapter 10
49. Ibid
50. Ibid
51. Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf
52. Personal interviews
53. Personal interviews
54. FSH 1909.15 Chapter 10; Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation
55. FSH 1909.15 Chapter 10
56. USDA Forest Service. (2021, October 27). National Environmental Policy Act 101: Overview of the Process and Public Participation Opportunities [PowerPoint slides]
57. FSH 1909.15 Chapter 30
58. Personal interviews
59. Council on Environmental Quality. (2007). A Citizen's Guide to the NEPA. https://ceq.doe.gov/docs/get-involved/Citizens_Guide_Dec07.pdf; National Environmental Policy Act (NEPA) Compliance, 36 C.F. R § 220; Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf; Personal interviews
60. USDA Forest Service. Forest Service Schedule of Proposed Actions. <https://www.fs.fed.us/sopa/>; Personal interviews
61. Ibid.
62. National Environmental Policy Act (NEPA) Compliance, 36 C.F. R § 220
63. FSH 1909.15 Chapter 10; Personal interviews
64. USDA Forest Service. (2021, October 27). National Environmental Policy Act 101: Overview of the Process and Public Participation Opportunities [PowerPoint slides]; Personal interviews
65. USDA Forest Service. (2021, October 27). National Environmental Policy Act 101: Overview of the Process and Public Participation Opportunities [PowerPoint slides]; USDA Forest Service (n.d.) National Environmental Policy Act (NEPA) Concepts. https://www.fs.fed.us/emc/nepa/fs_nepa_concepts/index.html; Personal interviews
66. FSH 1909.15 Chapter 30
67. Ibid; Personal interviews
68. USDA Forest Service. (2021, October 27). National Environmental Policy Act 101: Overview of the Process and Public Participation Opportunities [PowerPoint slides]; Council on Environmental Quality. (2007). A Citizen's Guide to the NEPA. https://ceq.doe.gov/docs/get-involved/Citizens_Guide_Dec07.pdf
69. Council on Environmental Quality. (2007). A Citizen's Guide to the NEPA. https://ceq.doe.gov/docs/get-involved/Citizens_Guide_Dec07.pdf; Personal interviews
70. USDA Forest Service. (2021, October 27). National Environmental Policy Act 101: Overview of the Process and Public Participation Opportunities [PowerPoint slides]; Council on Environmental Quality. (2007). A Citizen's Guide to the NEPA. https://ceq.doe.gov/docs/get-involved/Citizens_Guide_Dec07.pdf
71. Ibid.
72. Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf; USDA Forest Service. (2021, October 27). National Environmental Policy Act 101: Overview of the Process and Public Participation Opportunities [PowerPoint slides]; National Environmental Policy Act (NEPA) Compliance, 36 C.F. R § 220; Personal interviews

73. Ibid; Personal interviews
74. Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf
75. FSH 1909.15 Chapter 20; 1909.15 Chapter 10
76. FSH 1909.15 Chapter 20
77. FSH 2409.18 Chapter 30; Personal interviews
78. USDA Forest Service. (n.d.) Basic Timber Sale Preparation Study Guide; Personal interviews
79. FSH 2409.18 Ch. 10; Barnhart, R. (2021, June 17) Timber Strategies Meeting: Timber Sale Preparation, Stewardship authority, Good Neighbor Authority & Tribal Forest Protection Act [PowerPoint slides]. USDA Forest Service; Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf; Personal interviews
80. Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf; Personal interviews
81. Brandt, L. & Schultz, C. (June, 2016). Climate Change Considerations in National Environmental Policy Act Analysis. U.S. Department of Agriculture, Forest Service, Climate Change Resource Center: www.fs.usda.gov/ccrc/topics/nepa; Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf
82. USDA Forest Service. (2021, October 27). National Environmental Policy Act 101: Overview of the Process and Public Participation Opportunities [PowerPoint slides]
83. FSH 1909.15 Chapter 10
84. Personal interviews
85. USDA Forest Service. (n.d.). Objection Process (36 CFR 218) For HFRA and Non-HFRA Projects (Also: Sue Dixon)
86. USDA Forest Service. (2021, October 27). National Environmental Policy Act 101: Overview of the Process and Public Participation Opportunities [PowerPoint slides]
87. FSH 1909.15 Chapter 20; Personal interviews
88. Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf
89. FSH 1909.15 Chapter 20; Brandt, L. & Schultz, C. (June, 2016). Climate Change Considerations in National Environmental Policy Act Analysis. U.S. Department of Agriculture, Forest Service, Climate Change Resource Center: www.fs.usda.gov/ccrc/topics/nepa; Personal interviews
90. Personal interviews
91. USDA Forest Service. (2021, October 27). National Environmental Policy Act 101: Overview of the Process and Public Participation Opportunities [PowerPoint slides]; USDA Forest Service (n.d.) National Environmental Policy Act (NEPA) Concepts. https://www.fs.fed.us/emc/nepa/fs_nepa_concepts/index.html; National Environmental Policy Act (NEPA) Compliance, 36 C.F. R § 220
92. Personal interviews
93. FSH 1909.15 Chapter 40
94. USDA Forest Service. (n.d.). Project-Level Pre-decisional Administrative Review Process 36 CFR Part 218. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5442116.pdf
95. Ibid.
96. USDA Forest Service. (n.d.). Objection Process (36 CFR 218) For HFRA Projects; USDA Forest Service. (n.d.). Objection Process (36 CFR 218) For non-HFRA Projects; Planning, 36 C.F. R § 219
97. USDA Forest Service. (n.d.). Objection Process (36 CFR 218) For HFRA Projects; USDA Forest Service. (n.d.). Objection Process (36 CFR 218) For non-HFRA Projects; USDA Forest Service. (2021, October 27). National Environmental Policy Act 101: Overview of the Process and Public Participation Opportunities [PowerPoint slides]
98. USDA Forest Service. (n.d.). Project-Level Pre-decisional Administrative Review Process 36 CFR Part 218. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5442116.pdf
99. USDA Forest Service. (2021, October 27). National Environmental Policy Act 101: Overview of the Process and Public Participation Opportunities [PowerPoint slides]
100. USDA Forest Service. (n.d.). Project-Level Pre-decisional Administrative Review Process 36 CFR Part 218. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5442116.pdf
101. Ibid.

Endnotes: Implementation

1. Personal interviews
2. Personal interviews
3. Personal interviews
4. Personal interviews
5. Personal interviews
6. Personal interviews
7. Personal interviews
8. Personal interviews
9. Personal interviews
10. FSH 2409.19 Chapter 10; FSH 2409.19 Chapter 40; USDA Forest Service. (n.d.) Basic Timber Sale Preparation Study Guide; Personal interviews
11. Personal interviews
12. FSH 2409.19 Chapter 60; 2409.19 Chapter 80; Personal interviews
13. USDA Forest Service. (2020). Best Practices Guide to Execute a USDA Forest Service 638 Agreement Under the Tribal Forest Protection Act. www.fs.usda.gov/sites/default/files/Best-Practices-Guide-20200909.pdf; Cowan, E., Bertone-Riggs, T., & Davis, E.J. (2020). From Ideas to Action: A Guide to Funding and Authorities for Collaborative Restoration. Rural Voices for Conservation Coalition. https://static1.squarespace.com/static/562e839ee4b0332955e8143d/t/5e912f45ccd7b2547313d4fa/1586573133700/RVCC_Ideas2Action_FINAL_lo-res_04-10-2020.pdf
14. National Forest Management Act of 1976, Public Law No. 94–588, 1976. <https://www.fs.fed.us/emc/nfma/includes/NFMA1976.pdf>; FSM 2400 Chapter 2430; Moseley, C. (2003) Procurement & Timber Sale Contracting Definitions. Ecosystem Workforce Program. <https://scholarsbank.uoregon.edu/xmlui/handle/1794/2294>
15. Moseley, C. (2003) Procurement & Timber Sale Contracting Definitions. Ecosystem Workforce Program. <https://scholarsbank.uoregon.edu/xmlui/handle/1794/2294>; FSM 2400 Chapter 2430; FSH 2409.18 Chapter 40
16. FSH 2409.19 Chapter 60
17. Ibid
18. Ibid
19. FSM 2400 Chapter 2430
20. FSH 2409.19 Chapter 60
21. Ibid
22. Ibid
23. Ibid
24. Moseley, C., Davis, E.J., & Bixler, R.P. (2015). Innovative Contracting: A Guide for Collaborative Groups and Community Partners. Ecosystem Workforce Program. http://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/QG_InnovativeContracting.pdf
25. Moseley, C. (2003) Procurement & Timber Sale Contracting Definitions. Ecosystem Workforce Program. <https://scholarsbank.uoregon.edu/xmlui/handle/1794/2294>
26. Ibid
27. Presley, J., C. Spencer and C. Moseley. (2006). Monitoring Innovative Contracting on the Malheur National Forest: Did Local Communities Benefit? Ecosystem Workforce Program. University of Oregon, Eugene, OR. <https://scholarsbank.uoregon.edu/xmlui/handle/1794/3209>
28. Presley, J., C. Spencer and C. Moseley. (2006). Monitoring Innovative Contracting on the Malheur National Forest: Did Local Communities Benefit? Ecosystem Workforce Program. University of Oregon, Eugene, OR. <https://scholarsbank.uoregon.edu/xmlui/handle/1794/3209>; Moseley, C. (2003) Procurement & Timber Sale Contracting Definitions. Ecosystem Workforce Program. <https://scholarsbank.uoregon.edu/xmlui/handle/1794/2294>
29. Presley, J., C. Spencer and C. Moseley. (2006). Monitoring Innovative Contracting on the Malheur National Forest: Did Local Communities Benefit? Ecosystem Workforce Program. University of Oregon, Eugene, OR. <https://scholarsbank.uoregon.edu/xmlui/handle/1794/3209>
30. Ellison, A., A. Moote, H. Huber-Stearns and K. Jacobson. (2017). Investments and Local Capture on the Ochoco National Forest: Restoration and Timber Contracts, 2006–2015. Ecosystem Workforce Program. https://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/WVP_74.pdf
31. Ibid.
32. FSH 2409.18 Chapter 80
33. Ibid.
34. USDA Forest Service. (2020). Best Practices Guide to Execute a USDA Forest Service 638 Agreement Under the Tribal Forest Protection Act www.fs.usda.gov/sites/default/files/Best-Practices-Guide-20200909.pdf
35. Ibid.
36. Ibid.
37. Cowan, E., Bertone-Riggs, T., & Davis, E.J. (2020). From Ideas to Action: A Guide to Funding and Authorities for Collaborative Restoration. Rural Voices for Conservation Coalition.
38. FSM 2400 Chapter 2430
39. FSM 2400 Chapter 2470
40. Moseley, C. (2003) Procurement & Timber Sale Contracting Definitions. Ecosystem Workforce Program. <https://scholarsbank.uoregon.edu/xmlui/handle/1794/2294>
41. Personal interviews

42. Ibid
43. Ibid
44. Ibid
45. Ibid
46. Ibid
47. Ibid
48. Ibid
49. Cowan, E., Grimm, K.E., Davis, E.J., Nielsen, E.A., & Waltz, A.E.M (2021). New Hands in US Public Lands Management: The Role and Influence of Nonagency Partners in Forest Service Stewardship Agreements. *Journal of Forestry*, 1-14.
50. Personal interviews
51. Ibid
52. Ibid
53. Ibid
54. Ibid
55. Ibid
56. Ibid
57. Ibid
58. Ibid
59. Ibid
60. Ibid
61. Ibid
62. Ibid
63. Ibid
64. Ibid
65. Ibid
66. Ibid
67. Ibid
68. Ibid
69. Ibid
70. Ibid
71. Ibid
72. Ibid
73. FSM 2400 Chapter 2470
74. FSH 2409.14 Chapter 20; FSM 2400 Chapter 2470
75. Personal interviews
76. Ibid
77. Ibid
78. Ibid
79. Ibid
80. Ibid
81. Ibid
82. Ibid.
83. Ibid.
84. Ibid
85. Ibid.
86. FSM 2441.1 and FSH 2409.12.
87. USDA Forest Service. (n.d.) Basic Timber Sale Preparation Study Guide; FSH 2409.12 Chapter 70
88. Personal interviews
89. Ibid.
90. FSM 2440 Chapter 2440; Personal interviews
91. Personal interviews
92. FSH 2409.19 Chapter 60; FSM 2440 Chapter 2440
93. FSM 2440 Chapter 2440
94. FSH 2409.19 Chapter 60
95. Personal interviews
96. Ibid
97. Ibid
98. Ibid
99. Ibid
100. Ibid
101. Ibid
102. Ibid
103. Ibid
104. Ibid
105. Ibid
106. Ibid
107. Ibid
108. Ibid
109. FSH 2409.19 Chapter 60; Personal interviews
110. USDA Forest Service. (n.d.) Basic Timber Sale Preparation Study Guide; Personal interviews
111. Personal interviews
112. Personal interviews
113. Personal interviews
114. USDA Forest Service. (n.d.) Forest Operations Equipment Catalog: Cable Logging Operations <https://www.fs.fed.us/forestmanagement/equipment-catalog/cable.shtml>
115. Ibid.
116. Personal interviews
117. USDA Forest Service. (n.d.) Forest Operations Equipment Catalog: Helicopter Extraction <https://www.fs.fed.us/forestmanagement/equipment-catalog/helicopter.shtml>
118. Personal interviews
119. Ibid
120. Ibid
121. Ibid
122. Ibid
123. Ibid
124. Ibid

125. Ibid
126. Ibid
127. USDA Forest Service (n.d.) USFS Timber Sale Preparation Process (the Gate System) [Video]. <https://www.fs.fed.us/forestmanagement/video/GatesNew-3/GatesNew-3.html>
128. Personal interviews
129. Ibid
130. Ibid
131. Ibid
132. Ibid
133. FSH 2409.12 Chapter 10; Personal interviews
134. FSH 2409.12 Chapter 10; Personal interviews
135. USDA Forest Service. (n.d.) Basic Timber Sale Preparation Study Guide; Personal interviews
136. Personal interviews
137. Ibid
138. USDA Forest Service. (n.d.) Basic Timber Sale Preparation Study Guide
139. Personal interviews
140. FSH 2409.18 Chapter 40
141. Ibid.
142. USDA Forest Service. (n.d.) Basic Timber Sale Preparation Study Guide; Personal interviews
143. Ibid
144. Ibid
145. USDA Forest Service Pacific Northwest Region. (2018) Transaction Evidence Appraisal User Guide. ; FSH 2409.18 Chapter 10; Personal interviews
146. FSH 2409.18 Chapter 40; Personal interviews
147. FSH 2409.18 Chapter 40
148. Personal interviews
149. USDA Forest Service. (n.d.) Basic Timber Sale Preparation Study Guide; FSH 2409.18 Chapter 40
150. FSH 2409.18 Chapter 10; FSH 2409.19 Chapter 20; FSM 2400 Chapter 2430; Personal interviews
151. FSH 2409.18 Chapter 40; Personal interviews
152. USDA Forest Service. (n.d.) Basic Timber Sale Preparation Study Guide; Personal interviews
153. Personal interviews
154. Ibid
155. Ibid
156. Ibid.
157. Powell, D. (2014). Fact Sheet: Forest Service Trust Funds. WHITE PAPER FI4-SO-WP-SILV-17. Umatilla National Forest. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3794956.pdf
158. Ibid
159. Ibid
160. USDA Forest Service. (n.d.) Basic Timber Sale Preparation Study Guide; Personal interviews
161. FSH 6509.11g Chapter 70; Personal interviews
162. Personal interviews
163. FSH 2409.19 Chapter 40; Personal interviews
164. FSH 7709.58 Chapter 10; Personal interviews
165. USDA Forest Service Pacific Northwest Region. (2018) Transaction Evidence Appraisal User Guide; Personal interviews
166. Personal interviews
167. Personal interviews
168. FSH 6509.11g Chapter 70; Powell, D. (2014). Fact Sheet: Forest Service Trust Funds. WHITE PAPER FI4-SO-WP-SILV-17. Umatilla National Forest.
169. Personal interviews
170. FSH 2409.19 Chapter 40; Powell, D. (2014). Fact Sheet: Forest Service Trust Funds. WHITE PAPER FI4-SO-WP-SILV-17. Umatilla National Forest.;
171. Personal interviews
172. FSH 6509.11g Chapter 70; Powell, D. (2014). Fact Sheet: Forest Service Trust Funds. WHITE PAPER FI4-SO-WP-SILV-17. Umatilla National Forest. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3794956.pdf
173. FSH 2409.19 Chapter 10; Personal interviews
174. FSH 2409.19 Chapter 10
175. FSH 2409.18 Chapter 10; USDA Forest Service. (n.d.) Basic Timber Sale Preparation Study Guide; Personal interviews
176. FSH 2409.19 Chapter 10; Personal interviews
177. FSH 2409.19 Chapter 20
178. FSH 2409.19 Chapter 30
179. FSH 2409.19 Chapter 70
180. Ibid.
181. FSH 6509.11g Ch. 70; Powell, D. (2014). Fact Sheet: Forest Service Trust Funds. WHITE PAPER FI4-SO-WP-SILV-17. Umatilla National Forest.
182. FSH 2409.19 Chapter 70
183. Personal interviews
184. FSH 2409.19 Chapter 60
185. Ibid.
186. Ibid.
187. Ibid.
188. Ibid.
189. Personal interviews
190. FSM 2400 Chapter 2430; Moseley, C. (2003) Procurement & Timber Sale Contracting Definitions. Ecosystem Workforce Program. <https://scholarsbank.uoregon.edu/xmlui/handle/1794/2294>
191. FSH 1509.11 Chapter 70

192. Personal interviews
193. Ibid
194. USDA Forest Service (n.d.) USFS Timber Sale Preparation Process (the Gate System) [Video]. <https://www.fs.fed.us/forestmanagement/video/GatesNew-3/GatesNew-3.html>; Personal interviews
195. Personal interviews
196. Ibid
197. Ibid
198. Ibid
199. Ibid
200. Moseley, C. (2003) Procurement & Timber Sale Contracting Definitions. Ecosystem Workforce Program. <https://scholarsbank.uoregon.edu/xmlui/handle/1794/2294>; Personal interviews
201. Personal interviews
202. Carol Daly, C., Moseley, C., Moote, A., & Enzer, M. (2006). Forest Service Contracting: A Basic Guide for Restoration Practitioners. Ecological Restoration Institute. <https://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/downloads/ContractGuideFinalReadersSecure.pdf>; Personal interviews
203. Moseley, C., Davis, E.J., & Bixler, R.P. (2015). Innovative Contracting: A Guide for Collaborative Groups and Community Partners. Ecosystem Workforce Program. http://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/QG_InnovativeContracting.pdf
204. Ibid.
205. Moseley, C. (2003) Procurement & Timber Sale Contracting Definitions. Ecosystem Workforce Program. <https://scholarsbank.uoregon.edu/xmlui/handle/1794/2294>
206. Cudmore A., Davis, E.J., Hardigg, K., & Panches, J. (2019). East Face of the Elkhorn Mountains Project: A Case Study. Rural Voices for Conservation Coalition. https://static1.squarespace.com/static/562e839ee4b0332955e8143d/t/5ccb54797817f7881c4cfa0/1556829331474/EastFace_WEB_05022019.pdf
207. 2409.19 Chapter 60
208. Ibid.
209. Ibid.
210. Ibid.
211. Cowan, E., Grimm, K.E., Davis, E.J., Nielsen, E.A., & Waltz, A.E.M (2021). New Hands in US Public Lands Management: The Role and Influence of Nonagency Partners in Forest Service Stewardship Agreements. *Journal of Forestry*, 1-14.
212. FSH 1509.11 Chapter 70
213. Personal interviews
214. Ibid.
215. Personal interviews
216. FSH 1509.11 Chapter 70
217. FSM 2400 Chapter 2430
218. FSH 2409.18 Chapter 50; FSH 2409.18 Chapter 10
219. FSM 2400 Chapter 2430
220. Ibid.
221. Ibid
222. Moseley, C. (2003) Procurement & Timber Sale Contracting Definitions. Ecosystem Workforce Program. <https://scholarsbank.uoregon.edu/xmlui/handle/1794/2294>
223. Ibid.
224. Carol Daly, C., Moseley, C., Moote, A., & Enzer, M. (2006). Forest Service Contracting: A Basic Guide for Restoration Practitioners. Ecological Restoration Institute. <https://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/downloads/ContractGuideFinalReadersSecure.pdf>
225. General Services Administration. (n.d.) About This Site. <https://sam.gov/content/about/this-site>
226. 2409.19 Chapter 60
227. Ibid.
228. FSH 2409.18 Chapter 10
229. Personal interviews
230. FSH 2409.18 Chapter 60
231. Moseley, C. (2003) Procurement & Timber Sale Contracting Definitions. Ecosystem Workforce Program. <https://scholarsbank.uoregon.edu/xmlui/handle/1794/2294>
232. FSH 2409.18 Chapter 60
233. FSH 2409.18 Chapter 60; Personal interviews
234. FSH 2409.18 Chapter 60
235. 2409.19 Ch. 60
236. Ibid.
237. Ibid.
238. Carol Daly, C., Moseley, C., Moote, A., & Enzer, M. (2006). Forest Service Contracting: A Basic Guide for Restoration Practitioners. Ecological Restoration Institute. <https://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/downloads/ContractGuideFinalReadersSecure.pdf>
239. Ibid
240. FSH 2409.18 Chapter 10
241. Personal interviews
242. FSH 2409.18 Chapter 60
243. FSM 2400 Chapter 2430; Personal interviews
244. FSM 2400 Chapter 2430; Personal interviews
245. Personal interviews
246. Ibid

247. USDA Forest Service Region 6 Data Resources Management (February, 2022). USFS Fuels Treatments - State of Oregon.
248. Personal interviews
249. FSH 1509.11 Chapter 70; Personal interviews
250. Personal interviews
251. FSH 2409.15 Chapter 10
252. USDA Forest Service. (n.d.) Basic Timber Sale Preparation Study Guide
253. Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf
254. Davis, E.J. (2021). Connecting Collaboration to Wellbeing in Harney County: An Introductory Guide to Using Social Science in Collaborative Processes. Ecosystem Workforce Program Working Paper #102. <https://scholarsbank.uoregon.edu/xmlui/handle/1794/26157>; Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf
255. Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf; Personal interviews
256. FSH 2409.18 Chapter 40
257. Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf; Personal interviews
258. Personal interviews
259. Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf; Personal interviews



Endnotes: Important Terms

1. USDA Forest Service. (2010). Blue Mountains Forests Revised Land and Resource Management Plan Glossary. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5260256.pdf
2. FSH 2409.18 Chapter 40
3. USDA Forest Service (2000, November 15) Forest Service Directives. <https://www.fs.fed.us/im/directives/>
4. USDA Forest Service Pacific Northwest Region (n.d.). Grants & Agreements. <https://www.fs.usda.gov/main/r6/workingtogether/grants>
5. FSM 2400 Chapter 2440; USDA Forest Service Southern Research Station. (n.d.) Glossary of Forest Engineering Terms. www.srs.fs.usda.gov/forestops/glossary/
6. FSH 2409.18 Chapter 40
7. FSH 2409.18 Chapter 40
8. USDA Forest Service. (2010). Blue Mountains Forests Revised Land and Resource Management Plan Glossary. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5260256.pdf
9. Moseley, C. (2003) Procurement & Timber Sale Contracting Definitions. Ecosystem Workforce Program. <https://scholarsbank.uoregon.edu/xmlui/handle/1794/2294>
10. USDA Forest Service. (n.d.) Basic Timber Sale Preparation Study Guide
11. FSH 1909.15 Chapter 30; USDA Forest Service. (2021, October 27). National Environmental Policy Act 101: Overview of the Process and Public Participation Opportunities [PowerPoint slides]
12. Moseley, C., Davis, E.J., & Bixler, R.P. (2015). Innovative Contracting: A Guide for Collaborative Groups and Community Partners. Ecosystem Workforce Program. http://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/QG_InnovativeContracting.pdf
13. FSM 2400 Chapter 2440
14. FSH 1909.15 Zero Code
15. FSH 1909.15 Zero Code
16. FSH 1909.15 Zero Code
17. Barnhart, R. (2021, June 17) Timber Strategies Meeting: Timber Sale Preparation, Stewardship authority, Good Neighbor Authority & Tribal Forest Protection Act [PowerPoint slides]. USDA Forest Service
18. Ibid.
19. Council on Environmental Quality. (2007) A Citizen's Guide to the NEPA.
20. Council on Environmental Quality. (2007) A Citizen's Guide to the NEPA.
21. USDA Forest Service Southern Research Station. (n.d.) Glossary of Forest Engineering Terms. www.srs.fs.usda.gov/forestops/glossary/
22. FSH 1909.15 Chapter 40
23. USDA Forest Service Southern Research Station. (n.d.) Glossary of Forest Engineering Terms. www.srs.fs.usda.gov/forestops/glossary/
24. Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf
25. Powell, D. (2014). Fact Sheet: Forest Service Trust Funds. WHITE PAPER FI4-SO-WP-SILV-17. Umatilla National Forest.
26. USDA Forest Service Southern Research Station. (n.d.) Glossary of Forest Engineering Terms. www.srs.fs.usda.gov/forestops/glossary/
27. USDA Forest Service. (2010). Blue Mountains Forests Revised Land and Resource Management Plan Glossary. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5260256.pdf
28. www.srs.fs.usda.gov/forestops/glossary/
29. FSH 2409.12 Chapter 70
30. 40 CFR 1508(s)
31. U.S. General Accounting Office. (1997). Unauthorized Use of the National Forest Fund. <https://www.gao.gov/assets/rced-97-216.pdf>
32. USDA Forest Service Region 6 Data Resources Management (February, 2022). USFS Fuels Treatments - State of Oregon.
33. FSM 2400 Chapter 2470
34. USDA Forest Service Southern Research Station. (n.d.) Glossary of Forest Engineering Terms. www.srs.fs.usda.gov/forestops/glossary/
35. Powell, D. (2014). Fact Sheet: Forest Service Trust Funds. WHITE PAPER FI4-SO-WP-SILV-17. Umatilla National Forest. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb3794956.pdf
36. FSH 1909.15 Zero Code
37. Moseley, C., Davis, E.J., & Bixler, R.P. (2015). Innovative Contracting: A Guide for Collaborative Groups and Community Partners. Ecosystem Workforce Program. http://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/QG_InnovativeContracting.pdf
38. FSH 2409.18 Chapter 10
39. USDA Forest Service. (2010). Blue Mountains Forests Revised Land and Resource Management Plan Glossary. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5260256.pdf
40. FSH 1909.15 Zero Code
41. FSH 1909.15 Chapter 10

42. Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf
43. FSH 1909.15 Zero Code
44. FSH 1909.15 Zero Code; Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf
45. FSH 2409.19 Chapter 60
46. USDA Forest Service. (n.d.) Basic Timber Sale Preparation Study Guide
47. FSH 2409.19 Chapter 70
48. FSH 1909.15 Zero Code
49. FSH 1909.15 Chapter 10; Schmidt, A. (2013). A Roadmap For Collaboration Before, During and After the NEPA Process. National Forest Foundation https://www.nationalforests.org/assets/files/Roadmap-for-Collaboration-Before-During-and-After-the-NEPA-Process_NFF.pdf
50. Carol Daly, C., Moseley, C., Moote, A., & Enzer, M. (2006). Forest Service Contracting: A Basic Guide for Restoration Practitioners. Ecological Restoration Institute. <https://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/downloads/ContractGuideFinalReadersSecure.pdf>
51. General Services Administration (n.d.) Knowledge Base: Contract Opportunities https://www.fsd.gov/gsafsd_sp?id=kb_category&kb_category=31ffb2c01b4f64108aa3a8eae54bcfe&kb_id=f66d8e6cdb76d4100d73f81d0f9619c6
52. 40 CFR 1508.27
53. FSM 2400 Chapter 2470
54. USDA Forest Service Southern Research Station. (n.d.) Glossary of Forest Engineering Terms. www.srs.fs.usda.gov/forestops/glossary/
55. General Services Administration (n.d.) Knowledge Base: Contract Opportunities https://www.fsd.gov/gsafsd_sp?id=kb_category&kb_category=31ffb2c01b4f64108aa3a8eae54bcfe&kb_id=f66d8e6cdb76d4100d73f81d0f9619c6
56. FSM 2400 Chapter 2470; USDA Forest Service Southern Research Station. (n.d.) Glossary of Forest Engineering Terms. www.srs.fs.usda.gov/forestops/glossary/
57. Personal interviews
58. Powell, D. (2014). Fact Sheet: Forest Service Trust Funds. WHITE PAPER FI4-SO-WP-SILV-17. Umatilla National Forest. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3794956.pdf
59. USDA Forest Service. (n.d.) Basic Timber Sale Preparation Study Guide
60. USDA Forest Service Southern Research Station. (n.d.) Glossary of Forest Engineering Terms. www.srs.fs.usda.gov/forestops/glossary/



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